Transport Canada Transports Canada

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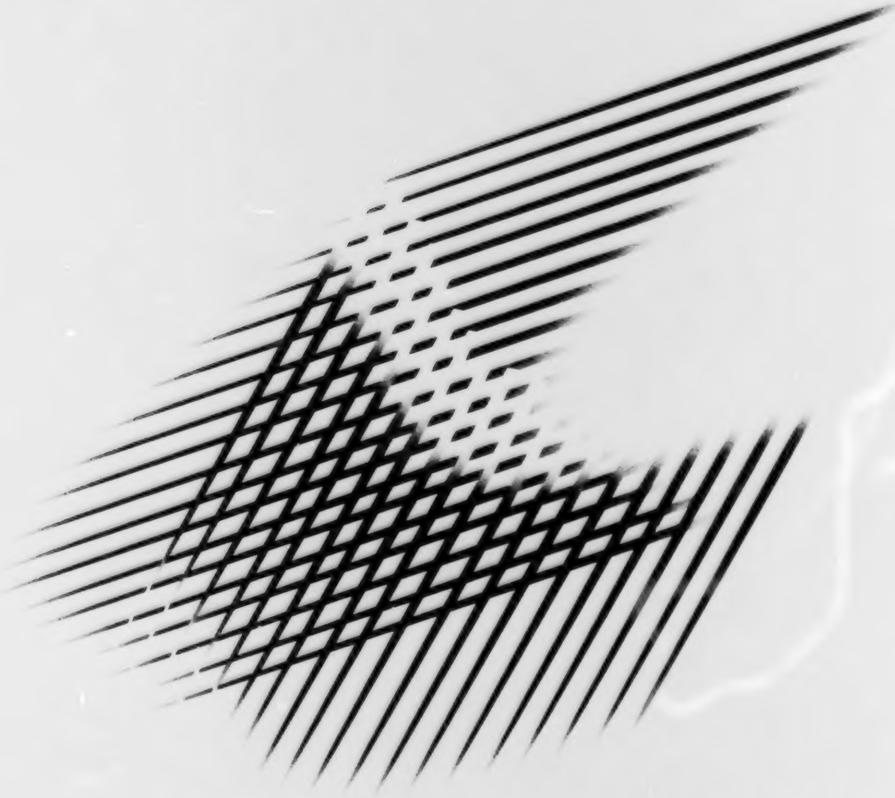
TRANSPORTATION IN CANADA 1999

ANNUAL REPORT



2000
Canada

Canada

SHARING THE MEMORY
SHAPING THE DREAM

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Minister of Transport Ministre des Transports

Ottawa, Canada K1A 0N5

4/5/00

Her Excellency the Right Honourable Adrienne Clarkson, C.C., C.M.M., C.D.
Governor General of Canada
Rideau Hall
1 Sussex Drive
Ottawa, Ontario
K1A 0A1

Excellency:

I am pleased to submit to your attention the 1999 Annual Report on the state of transportation in Canada. This report responds to the requirements set out in section 52 of the *Canada Transportation Act.*

The 1999 annual report provides a wealth of information on the state of the Canadian transportation system at the turn of the century. It looks at the safety aspects of transport activities and examines the performance of the Canadian transportation system, as well as events which influenced it.

Canada experienced in 1999 a vigorous economic expansion, which translated into higher levels of demand for transport services. During the course of the year, the Transportation Climate Change Table was quite active and looked at a number of options to reduce transportation's green house gas emissions. The Annual Report gives an overview of this work.

For most Canadian transport carriers, the strong level of demand reflected positively on their financial results in 1999. But there were exceptions. The airline restructuring is indicative of the government's dedicated efforts to maintain a viable transport system while allowing the private sector, driven by market forces, to strive for efficiency.

As we enter into the new millennium and the age of electronic commerce, Canada's growth, standard of living and trade activities will depend more than ever on our capacity to move people and goods safely, efficiently and reliably.

Yours sincerely,

Hon. David M. Collenette, P.C., M.P.

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REPORT HIGHLIGHTS

TRANSPORTATION AND THE CANADIAN ECONOMY

- The year 1999 saw vigorous growth of the Canadian economy. This was due in large part to investment spending on machinery and equipment and sustained consumer spending resulting from rising incomes, which drove growth in manufacturing production.
- The automotive sector did particularly well, including automotive export products.
- The strong US economy also produced strong merchandise export sales for Canadian firms. The energy, forestry, and machinery and equipment sectors enjoyed particularly significant increases.
- Despite the declining natural rate of population increase, the country's population grows at 1.1 per cent a year as a result of net positive population immigration. An average 300,000 Canadians migrate yearly from one province to another, mainly young adults driven by employment market considerations.
- The aging of the Canadian population and the variation in the age structure across Canada are drivers of changes in transportation demand. In addition, an increasing concentration of the Canadian population in large urban areas is adding pressure to transportation systems, as the automobile is the preferred mode of transportation used by Canadians to get to work.
- In 1999, transportation demand accounted for 13.2 per cent of GDP. Transportation demand grew in 1999 faster than the economy as a whole, as was the case for the last five years. This can be explained partly by the increasing importance of exports to the Canadian economy.

GOVERNMENT SPENDING ON TRANSPORTATION

- In fiscal year 1998/99, total annual government spending on transportation was $15.7 billion, an increase of 0.5 per cent over 1997/98. (This total does not include expenditures made by new entities such as port and airport authorities.)
- From 1994/95 to 1998/99, local governments increased their net expenditures on transportation by 2.5 per cent a year. Over the same period, the federal government has halved its net expenditures on transportation due to divestiture and commercialization initiatives.
- In fiscal year 1998/99, provincial government expenditures on transportation increased by nine per cent to reach $7.9 billion.
- In 1999/2000, the revenues (excluding fuel tax revenues) accruing to the federal government from transportation are expected to total $402 million, compared with $1.0 billion in 1997/98. Airport lease and marine fees are two of the important sources of federal revenues from transportation.
- In 1998/99, the federal government generated $4.7 billion in fuel tax revenues, while provincial governments generated $6.7 billion.
- With the transfer of the operations of the Air Navigation System to NAV Canada and the divestiture of airports and ports to local authorities, the single largest federal transport expense in fiscal year 1999/2000 is tied to Coast Guard services.
- The two most significant direct federal subsidies, grants and contributions to transport by the federal government went in 1999/2000 to roads ($228.9 million) and VIA Rail ($170.3 million).

- At the provincial/territorial and local government level, spending on transportation represented $14.5 billion in 1998/99. Spending on roads and highways was the most important transport-related provincial expenditure. Ontario and Quebec spend a lot on transit, while the territories spend relatively more on air transportation.
- For 1998/99, the modal breakdown of all government spending on transportation was $14.4 billion on roads and transit systems, $246 million on rail, $740 million on marine transportation and $71 million on air.

TRANSPORTATION AND SAFETY

- The year 1999 represented a record low in the number of occurrences in air transportation. The most recent year for road accident information (1998) also showed significant improvement in safety records.
- A total of 1,129 rail-related accidents were reported in 1999, with 36 per cent of these accidents off the main track, 25 per cent at railway crossings and 11 per cent being main-track train derailments. The number of trespasser accidents rose from 78 to 94, still below the five-year average of 103. A total of 105 persons were fatally injured in rail-related accidents, down from the five-year average of 111.
- The year 1998 saw 2,927 fatalities on roads, the lowest annual total in 43 years. The number of casualty collisions was also down.
- The number of fatalities involving commercial vehicles increased slightly in 1997, due in part to the bus accident at Les Eboulements, Quebec, in October 1997.
- There were 525 shipping accidents in 1999, up seven per cent over 1998; 280 of these involved fishing vessels. For vessels involved in passenger transportation, ferry and passenger vessels, the number involved in accidents was comparable with the previous five-year average. Marine transport-related fatalities, at 29, were down from the previous year (48) and the five-year average (35).
- Canadian-registered aircraft were involved in 340 accidents in 1999, down 12 per cent from 1998. Of these, only seven involved airliners aircraft, and only one of these involved fatalities (2). Air fatalities, at 67, were down by 19 per cent from 1998.
- In 1999, there were 518 reportable dangerous goods accidents. Total deaths from accidents involving dangerous goods totalled 27, and only two of these fatalities were the direct result of a dangerous good release.

TRANSPORTATION — ENERGY AND ENVIRONMENT

- In November 1999, the Transportation Climate Change Table completed its Options Paper which analyses options for a six per cent reduction of transportation's 1990 greenhouse gas emissions level by 2010. Under current trends, greenhouse gas emissions from transportation are expected to exceed 1990 levels by 32 per cent by 2010. A six per cent reduction from 1990 levels therefore implies a reduction of about 54 megatonnes by 2010.
- Road transport accounts for roughly 70 per cent of transportation emissions. Aviation, off-road uses and on-road diesel are the three transport sources of emissions expected to grow most rapidly between 1990 and 2020.
- The Table looked at costs and benefits of options across the entire transportation system. Measures grouped as passenger, road infrastructure, road vehicles and fuels, freight, and off-road were categorized as: *Most Promising Measures*, with positive benefits or costs less than $10 per tonne; *Promising Measures*, with modest cost or complementing other measures; *Less Promising Measures*, higher cost measures with potential of greenhouse gas reduction in the medium or longer term or requiring significantly more analysis; and *Unlikely Measures*, those not warranting active consideration.
- *Most Promising Measures* could generate 10.8 megatonnes of reductions in 2010, while *Promising Measures* offer the potential to reduce emissions by a further 32 megatonnes. This would still be 11 to 14 megatonnes short of the Kyoto target.
- In 1999, progress was achieved in three areas of Transport Canada's Sustainable Development Action Plan: the launching of the Moving on Sustainable Transportation Program, which funds project proposals from environmental, industry, academic and other groups; the expansion of Transport Canada's Environmental Management System to a broader scope of departmental activities and operations; and the development of a draft set of sustainable performance indicators.
- The Canadian Council of Ministers of the Environment accepted Standards for Particulate Matter and Ozone, setting numerical air quality targets for protecting the environment and reducing human health risk.
- In 1999, new regulations under the *Canadian Environmental Protection Act* were approved, phasing in a reduction of sulphur in gasoline of more than 90 per cent by January 1, 2005.

- The International Civil Aviation Organization (ICAO) approved in 1999 regulatory changes to reduce nitrogen oxide emission levels by 16 per cent for engines produced after December 31, 2003.
- Royal Assent was given in 1999 to the new *Canadian Environmental Protection Act*, giving stronger powers to government to protect the environment and human health. For transportation, the Act expands the authority to control the components and the handling of fuels, and provides for a national fuels mark to be used at gas station pumps, and transfers regulatory authority for road vehicle emissions from Transport Canada to Environment Canada.
- In 1998, transportation accounted for about one third of energy used in the country.

TRANSPORTATION AND REGIONAL ECONOMIES

- In terms of relative size of total transportation, Ontario, Quebec, British Columbia and Alberta are the top provinces, as are their provincial economies.
- Ontario is the only province to show a lower share of Canada's transport activities than that of total economic activities, which is explained by population density and proximity to key markets.
- Trucking experienced strong growth in 1998 due to exports, particularly in Ontario and Alberta. It declined, however, in British Columbia. Since the construction of the Confederation Bridge, trucking in Prince Edward Island has also grown significantly.
- In 1998, declines in rail transportation were registered in all provinces but Quebec. For marine transportation, declines were observed in British Columbia and Quebec, compared with growth driven by imports in Nova Scotia and Newfoundland. In air transportation, only British Columbia and Nova Scotia registered declines.
- Ontario led the growth in transportation employment in 1998 with 2.6 per cent, followed by Alberta and Quebec. Transportation employment growth was also strong in Newfoundland and Prince Edward Island. British Columbia faced declines. Growth in employment was mainly observed in trucking. Employment in rail declined in all provinces but Quebec. For air, only Alberta, British Columbia and Nova Scotia did not register increases in employment.
- In 1998, growth in total transportation expenditures was driven mainly by British Columbia and Ontario. In British Columbia, it came from government spending, while in Ontario, it was driven by personal expenditures. In Alberta, growth was low. In Quebec, a decline was observed. In Newfoundland, Nova Scotia, New Brunswick and Manitoba, transport-related expenditures grew, while they declined in Saskatchewan.

TRANSPORTATION AND EMPLOYMENT

- In 1999, almost 827,000 full-time employees worked in transportation, accounting for 6.9 per cent of total full-time employment in Canada. Of that total, 613,500 jobs were tied to transport services, 94,600 to transport-related services and 85,600 to the development and maintenance of transportation infrastructure. The rest were associated with transport jobs within governments.
- In 1998, the total number of rail-transport service employees declined by 4.5 per cent. Medium and large trucking firms engaged 0.8 per cent more employees, while small carriers employed 2.7 per cent fewer workers in 1997, the last year with official data. Employment in private trucking firms was down, while the number of owner-operators was up. Total employment in bus transportation increased in 1998. Growth in air transportation employment was 11 per cent in 1998 and six per cent in 1999. Average annual employment in marine transport was up by 2.1 per cent in 1999.
- In transport infrastructure, the number of people employed in both rail infrastructure services and road construction and maintenance did not change significantly in 1998. There were 12 per cent (estimated) more people working at airports in 1999. Ports authorities also increased their personnel in 1999. A decrease of eight per cent in 1999 was reported by the St. Lawrence Seaway Management Corporation. A slight increase in marine pilotage-related employment was noted in 1999.
- With respect to government services, the number of employees tied to transportation was down in 1999.
- The increase in average weekly earnings across all modes was in the order of 0.3 per cent in 1999, less than the increase for the economy as a whole.
- From 1990 to 1999, rail employees enjoyed the largest increase in average weekly salaries.
- A total of 12 labour stoppages was recorded for transportation during the first six months of 1999.

TRANSPORTATION AND TRADE

- The value of domestic trade increased by an average annual rate of four per cent from 1992 to 1998. In 1998, domestic trade totalled $1,354 billion; 87 per cent of this was intraprovincial and 13 per cent was interprovincial.
- From 1992 to 1998, the value of services traded rose from $792 billion to $996 billion, of which 90 per cent was traded intraprovincially.
- By volume, rail accounted for the largest share of domestic trade in 1998, followed by for-hire trucking. But the share of rail and marine from 1992 to 1998 declined, while that of trucking increased. In 1998, 429 million tonnes of traffic were tied to domestic traffic. Of this, 70 per cent of rail and marine activity was tied to the movement of primary goods and materials, while the same share in trucking was tied to manufactured goods and fabricated materials.
- By tonnage, for-hire trucking and rail filled the freight transport demand related to intraprovincial trade.
- A limited number of two-way trade route flows — Quebec–Ontario, Ontario–Alberta, Ontario–British Columbia, Ontario–Manitoba/Saskatchewan — accounted for over two thirds of total interprovincial trade.
- Between 1992 and 1998, Canada's exports and imports grew at an average annual rate of 11.9 and 10.9 per cent, respectively. This trade was dominated by goods (between 82 and 84 per cent of Canada's international trade).
- Trucking dominated Canada's trade with the US in 1998, accounting for 63 per cent of exports and 80 per cent of imports. Pipeline was third for exports while air was second for imports.
- The share of daily Canada–US border crossing by trucks of Canadian firms increased from 57 to 66 per cent between 1991 and 1998. Canadian-based for-hire trucking carriers have been shipping goods over greater distances in the Canada–US market.
- In 1998, Canada's trade with non-US countries fell, because of recessions and financial crises in Asian and Latin American economies. Marine and air are the primary modes used in trade with non-US countries. Air's share of this trade grew from 16 to 19 per cent in exports and from 15 to 22 per cent in imports between 1992 and 1998.

TRANSPORTATION AND TOURISM

- Travel within, to and from Canada increased in 1999 as the Canadian dollar appreciated slightly and the Canadian economy performed really well. The number of visitors from the US to Canada increased, as did the number of overseas visitors.
- Of the $47.1 billion of tourism spending in Canada in 1998, 39 per cent was on transportation; 70 per cent of this was by Canadians, a share that has been declining in the 1990s.
- Tourism expenditures on transportation were $18.5 billion in 1998. Of this, 57 per cent was on air, 35 per cent on motor vehicle transportation, three per cent on intercity bus, and one per cent on rail transportation. The remaining four per cent went to other transportation spending.
- The automobile maintained its dominance as the most common means of transportation in Canada, accounting for 91.8 per cent of all trips taken in 1998 and also increasing its share for overnight business travel. For Canada–US travel, automobile trips were the most significant part of same-day travel; they were less dominant for overnight travel but still the most important mode of transportation.
- Canadians spent a total of $16.7 billion outside the country in 1999 while foreign travellers spent $14.9 billion in Canada, 5.1 and 6.7 per cent increases, respectively. In 1999, Canadians only marginally increased their trips overseas, virtually all via air transportation.

TRANSPORTATION INFRASTRUCTURE

- In 1999, Canadian railways operated slightly less than 50,000 kilometres of track, with CN reducing its network by over eight per cent and CPR by 1.6 per cent. In contrast, the Canadian regional and shortline railway network grew by over 12 per cent, representing at year-end 30 per cent of the country's rail network. This was the third consecutive year of decline in the amount of track discontinued.
- Alberta dominated rail rationalization activities in 1999 with 993 route kilometres transferred and 110 abandoned.
- On the National Highway System, traffic increased almost nine per cent between 1993 and 1996, and almost 40 per cent over 1986. Ontario and Quebec accounted for over 60 per cent of the total vehicle-kilometres on the National Highway System, with 36 per cent for Ontario and 25 per cent for Quebec. British Columbia was the with 14 per cent of the total, followed by Alberta with nearly 11 per cent, Saskatchewan with four per cent, Nova Scotia with slightly more than three per cent, New Brunswick with about three per cent, Manitoba with nearly three per cent, and Newfoundland and Prince Edward Island with two per cent together.
- Toronto and Montreal are two of the busiest traffic centres in Canada. Traffic levels exceed 400,000 vehicles per day on some sections of Highway 401 passing through Toronto, and exceed 150,000 vehicles per day on some sections of Highway 40 in the Montreal core.
- In 1998, almost 90 per cent of total Canada–US truck movements passed through 20 border crossing sites. The busiest border crossings are in Ontario: Ambassador Bridge, Peace River Bridge, Blue Water Bridge and Queenston Bridge.
- By the end of 1999, 17 of the 18 ports designated to become Canada Port Authorities had received their CPA status and had established their boards of directors. In addition, Transport Canada had divested 357 public ports since 1996, leaving 192 regional, local and remote ports under federal control. A total of 1,070 fishing harbours were still under the inventory of the Department of Fisheries and Oceans, which had divested a total of 846 recreational harbours since 1995.
- The year 1999 was the first year of management by the St. Lawrence Seaway Management Corporation.
- Traffic along the Seaway in 1998 was estimated at $7.5 billion, up 4.4 per cent from 1997. The increase came from the Montreal–Lake Ontario section of the Seaway, as the Welland Canal section saw a decrease. Volume in 1999 was about 47.6 million tonnes, seven per cent lower than in 1998.
- Pilotage authorities reported positive net income in 1999.
- NAV Canada closed its North Bay tower in March 1999. It made investments in technology of over $100 million in 1999/2000.
- Increases to NAV Canada's user fees, scheduled for November 1, 1998, were deferred to March 1, 1999. Then in September 1999, NAV Canada introduced service charge reductions.
- The airports in Saskatoon, Regina, Charlottetown and Saint John were transferred to not-for-profit authorities in 1999, and Halifax in early 2000, leaving only four National Airport System airports under Transport Canada management.

STRUCTURE OF THE TRANSPORTATION INDUSTRY

- Since the late 1980s, over 40 shortline rail carriers have formed, operating more than 9,600 kilometres of track and generating aggregate annual revenues of almost $140 million.
- In 1999, the makeup of the Canadian shortline industry changed when Rail America Inc. purchased both RailLink and RailTex, increasing its ownership to nine operations in Canada. Four of the five major corporations operating shortline railways in Canada are US-owned.
- On December 20, 1999, Canadian National Railway Company and Burlington Northern Santa Fe Corporation announced the decision of their boards of directors to approve a definitive agreement to combine their businesses.
- In 1999, Mullen Transportation, Contrans Corporation, H&R Transport Limited and Trimac Transportation were among trucking firms acquiring interest in other trucking firms. Acquisitions were either of other Canadian-based carriers or of US-based ones.
- Almost 60 per cent of for-hire trucking revenues in 1998 were generated by general freight carriers. Extra-provincial activities accounted for 75 per cent of for-hire trucking revenues.
- The courier industry is concentrated, with 80 per cent of all courier traffic and revenues generated by nine carriers.
- Bankruptcies in trucking were up in 1999.
- The bus industry was a $5.9 billion industry in 1998, with $4.2 billion coming from urban transit, $1.3 billion from school bus operations and $473 million from intercity activities.
- In 1999, three container shipping lines, Zim, the China Ocean Shipping Company and Norasia, made Vancouver their first port of call. CN and CPR provided double-stack rail services at this port.
- Maersk Inc. acquired the international liner services of Sea-Land Services Inc. Maersk and Sea-Land decided to stay with New York/New Jersey as their main local centre port on the east coast of North America. The Port of Halifax finished second in the competition for Maersk's east coast business.
- The Transpacific Westbound Rate Agreement (TWRA) and the Asia North America Eastbound Rate Agreement (ANERA), the main shipping conferences on the US transpacific routes, were dissolved in the spring of 1999.
- On the domestic marine transport front, Algoma Central Corporation increased the size of its tanker fleet by purchasing three Canadian-registered tankers of EnerChem Corporation. Canada Steamship Lines took delivery of the CSL *Niagara* in 1999.
- Canada's cruise ship industry continued to grow and diversify in 1999.
- The restructuring of the Canadian airline industry received a lot of attention in 1999. The major phases of this restructuring were the August 13 Order in Council establishing a 90-day facilitating process; the release on October 26 of "A Policy Framework for Airline Restructuring in Canada" detailing the federal government's public policy objectives; and the December 21 announcement allowing the acquisition of Canadian Airlines on the basis of commitments from Air Canada and 853350 Alberta Ltd. made to the Minister of Transport and the Commissioner of Competition.

FREIGHT TRANSPORTATION

- CN and CPR experienced a drop in output in 1998, while Class II railways experienced an estimated increase of six per cent.
- Rail imports from the US reached 15.4 million tonnes in 1998, an increase of 4.6 per cent, while rail exports to the US reached 56.1 million tonnes, an increase of 5.2 per cent. Half the rail export growth took place in the forest product sector. Increased imports were recorded for chemicals, ores and mine products, and gasoline and fuel.
- In 1998, Class I railways moved 72.1 million tonnes of traffic to Canadian ports for export, compared with only 7.1 million tonnes of goods inland from Canadian ports.
- Grain, fertilizers, ores and mine products, coal, forest products, industrial products and intermodal products made up 97 per cent of rail traffic in Canada in 1999. The first three showed declines from 1998 levels and the other four showed increases.
- The number of tonne-kilometres attributed to for-hire trucking carriers totalled 76.7 billion in the domestic market and 61.4 billion in international markets in 1998. The average annual growth of traffic since 1991 has been seven per cent in the domestic market and 15.1 per cent in international markets. The two major sources of growth in freight truck traffic have been the general freight sector and the food product sector.
- Domestic marine traffic flows, at 48.3 million tonnes in 1998, were 31 per cent less than in 1988. Transborder flows of 100.1 million tonnes in 1998 surpassed, by almost six per cent, the record traffic level reached in 1997, while overseas activities, at 179.5 million tonnes, were down by 4.7 per cent from 1997.
- The most important sources of traffic for domestic marine services in 1998 were iron ore and concentrates (14 million tonnes), pulpwood and chips (12.4 million tonnes), fuel oil (9.7 million tonnes), stone and limestone (9.3 million tonnes) and wheat (nine million tonnes).
- Of transborder marine export traffic, 80 per cent was made up of iron ore, crude petroleum, gypsum, stone and limestone, fuel oil, salt and gasoline. On the import side, the significant commodities, accounting for 78 per cent of the total volume, were coal, iron ore, stone and limestone, fuel oil, other petroleum products, and alumina and bauxite. Major commodities shipped overseas from Canada were coal, iron ore, wheat, containerized freight, woodpulp, sulphur and potash. Key unloadings were made up of alumina/bauxite, containerized freight, iron and steel, fuel oil, iron ore, and gasoline.
- On the export side of Canadian liner trade activities in 1998, non-conference carriers handled 8.2 million tonnes of traffic, compared with 5.4 by conference lines. On the import side, 6.6 million tonnes were handled by non-conference carriers and 4.3 million tonnes by conference lines.
- Air cargo revenues represented 6.6 per cent of Air Canada and Canadian Airlines revenues in 1998. For Canadian air carriers, domestic cargo operations generated 67 per cent of their total cargo operating revenues. A total of 487,583 tonnes of domestic traffic was carried by air in 1998, five per cent less than in 1997.

PASSENGER TRANSPORTATION

- Rail passenger traffic declined in 1998, for both VIA Rail and Class II railways.
- In 1998, 6.1 million passengers travelled approximately 46 million kilometres on scheduled intercity bus service operations. The average use made of charter buses increased, while the number of passengers using urban transit remained constant.
- In 1999, a total of 16.5 million light vehicles were registered across the country, vehicles used by Canadians to satisfy a significant portion of their travel needs.
- The passenger count from cruise business at the Port of Vancouver was 948,000 in 1999, a 17th consecutive year of growth. Halifax also had a good year, with 108,000 passengers. Montreal and Quebec city recorded fewer cruise visitors in 1999.
- Growth in domestic air passenger traffic continued in 1998 but at a lower rate than in 1996 and 1997, reaching 26 million passengers. The year 1998 was the fifth consecutive year of growth in transborder air traffic, totalling 18.7 million passengers. Total traffic of 12.6 million passengers was reported in other international air services, an increase of 5.9 per cent from 1997. Preliminary statistics for 1999 suggest that air traffic continued to increase at a moderate rate in all these sections.

PRICE, PRODUCTIVITY AND FINANCIAL PERFORMANCE IN THE TRANSPORTATION SECTOR

- Rail freight transport service prices did not change in 1998 but declined by four per cent in the first nine months of 1999.
- Total factor productivity of Class I railways slowed down in 1998.
- The Canadian operations of CN and CPR continued to generate improved financial performance in 1999.
- VIA Rail generated an increase of ten per cent in its operating revenues in 1999. The growth in VIA's operating revenues since 1991 has come mainly from increased prices, 4.8 per cent a year on average. Labour productivity decreased in 1998.
- Total factor productivity in the trucking industry increased by 2.1 per cent a year between 1991 and 1998. The increase of 8.8 per cent in revenues from 1991 to 1998 came from an increased level of activity. In 1998 and 1999, the domestic activities surpassed those in the transborder market.
- The financial performance of the trucking industry improved in 1998.
- The revenues of the intercity bus industry jumped by 12 per cent in 1998, mainly because of an increase in outputs. Productivity gains and moderate factor price increases have allowed unit costs to decline by two per cent a year between 1991 and 1998. An improvement in the industry's operating ratio was achieved again in 1998.
- Between 1991 and 1998, prices of urban transit service operators increased on average by 4.2 per cent a year. In 1997 and 1998, average productivity improved by around 1.8 per cent per year. Users of urban transit services paid 47 per cent of the total cost of the system.
- In air transportation, prices increased by three per cent in 1998, with the largest increases noted in transborder markets.
- In 1998, airline productivity dropped by 6.5 per cent and unit costs increased by five per cent, which explains the deterioration in the profitability of the industry that year. In 1999, major carriers saw their total costs go up, translating into a deterioration of their operating ratios.

INTRODUCTION

1

The 1999 annual report presents the state of transportation in Canada at the turn of the century

The *Canada Transportation Act* (1996) requires the Minister of Transport to table a report every year on the state of transportation in Canada. More specifically, Section 52 of the Act mandates that:

"Each year the Minister shall, before the end of May, lay before Parliament a report briefly reviewing the state of transportation in Canada in respect of the preceding year, including:

(a) the financial viability of each mode of transportation and its contribution to the Canadian economy and the development of the regions;

(b) the extent to which carriers and modes of transportation were provided resources, facilities and services at public expenses;

(c) the extent to which carriers and modes of transportation received compensation, indirectly or directly, for the resources, facilities and services that were required to be provided as an imposed public duty; and

(d) any other transportation matters the Minister considers appropriate."

This report is the fourth one submitted by the Minister. It gives an overview of transportation in Canada at the turn of the century, using the most current data and information available. The report is not constrained by jurisdictional considerations; instead, its scope is as broad as possible to give a comprehensive overview of transportation in Canada. Although data availability was a limiting factor, the report covers up to and including the year 1999 wherever possible. Where this was not possible, the most current year for which information was available is reported. On any given subject, when nothing more current is available than what was previously reported, the reader is invited to look at earlier reports on Transport Canada's Web site at: www.tc.gc.ca

The report is more than a review of major transportation events in Canada in 1999. In a complex and rapidly changing world, events and non-events are sometimes equally important. Events that were considered most likely to influence transportation in the new millennium are addressed more extensively than others are. On the non-event side, everything was done to ensure that transportation services on January 1, 2000, would not be affected by the Millennium Bug. Consequently, from a transportation perspective, Canada's entry into the new century was an important non-event, as Canadians continued to benefit from a safe and secure transportation system.

As was the case last year, the content of the report is organized not by mode of transportation but according to different aspects of transportation, such as freight and passenger transportation services, as well as economic, safety, energy and environmental dimensions. This is intended to give readers different perspectives on the changes taking place in each mode; it is like looking at the same picture from different angles.

The structure of this report explicitly recognizes that transportation demand in Canada is derived from all other social and economic activities. Consequently, the report starts with a brief overview of the Canadian economy, which gives an understanding of the forces at play during 1999. The chapter on government spending gives a sense of the budgetary attention devoted by governments to the transportation sector. Government spending and revenues alone, however, do not provide a complete picture;

divestiture, commercialization and public-private partnership initiatives of recent years also played a role. Information provided in other chapters of this report helps to complete the picture.

A number of the following chapters deal with a key subject and the modal relationship. They examine transportation from a sustainability perspective and include safety, energy and environment, regional economies, employment, trade and tourism. This year's safety chapter focuses on safety statistics, presenting trends by mode of transportation. Of particular interest in the energy and environment chapter is a summary of the work of the Transportation Climate Change Table and its analysis of options to achieve a progressive reduction of greenhouse gas emissions within the transportation sector.

The chapter on regional economies gives an overview of transportation by regions. Due to a lack of available data, it was impossible to isolate the Nunavut Territory for this report. The employment chapter presents transportation from an employer's perspective. It covers three specific areas tied to employment: the workforce, i.e. the total number of people with jobs directly tied to transportation; the average salary earned by transportation employees; and the transportation sector's labour relations.

This is followed by two chapters on the role transportation plays in two activities significant to the country's economic growth and Canadians' standard of living: trade and tourism. The trade chapter puts a special emphasis on freight-related activities, both in terms of flows and modal distribution, while the tourism chapter takes a broad approach that includes all passenger transportation activities tied to leisure, business and other purposes.

The next five chapters examine specific elements of the Canadian transportation system. The chapter on infrastructure gives an overview of the country's overall transportation infrastructure, without which transportation services could not be offered. The focus of the road section of this chapter is on the National Highway System and recent traffic trends, as nothing more current than was presented in earlier reports was available on Canada's overall road network. Incidental services important to the safety and security of the transportation system, such as the air navigation system and marine pilotage services, are also addressed in this chapter. The next three chapters examine transport service industries from different perspectives: industry structure, freight transportation and passenger transportation. A final chapter looks at price, productivity and financial performance of transportation sectors.

The data and information sources used for this report are mostly external to Transport Canada. The validation of the information rests first and foremost within the organizations that produce and generate the information used. Nevertheless, in the production of this report, as in previous years, special attention was devoted not only to data quality, but also to data limitations. Numerous footnotes throughout the report indicate where these limitations constrained the analyses. As much as possible, when current timely data was not available, it was not estimated. It is also important to note that this report analyses the most current state of the country's transportation system — it does not try to predict what may be ahead in coming years.

TRANSPORTATION AND THE CANADIAN ECONOMY

2

Transportation can be examined as an economic sector whose activities contribute to the performance of the economy as a whole. In 1999, Canada experienced vigorous economic growth.

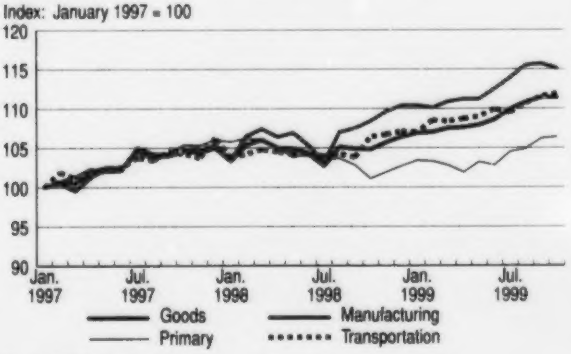
A review of the state of transportation in Canada begins with an understanding of the factors that have affected the level of demand for transportation services during the year. Since transportation derives its demand from all other economic activities, a quick overview of the performance of the Canadian economy and that of a few of its key trading partners, helps give an understanding of the influences on transportation during 1999.

THE CANADIAN ECONOMY IN 1999

In 1999, Canada experienced vigorous economic growth. Real Gross Domestic Product (GDP) rose four per cent, surpassing the performance of 1998. The continuing strength of the US economy generated demand for Canadian goods and services.

Figure 2-1 compares transportation's real GDP with that of other sectors.

FIGURE 2-1: REAL GDP BY MAJOR SECTORS



Source: Statistics Canada, Cat. 15-001

The strength of the economy was based on an 9.3 per cent increase (in real terms) in investment spending. Spending on machinery and equipment was particularly strong, increasing by 14.9 per cent, compared with 9.5 per cent in 1998. Y2K-related computer purchases were responsible for a large part of the increased investment spending. Consumer spending remained firm, growing by 3.2 per cent, up from 2.8 per cent growth the year before. Government spending rose by one per cent, down slightly from 1.7 per cent in 1998.

TABLE 2-1: GENERAL ECONOMIC INDICATORS

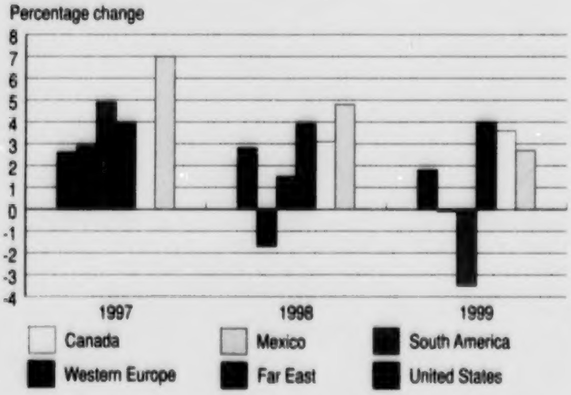
	1999	*Percentage change 1998 – 1999*	*Annual percentage change 1993 – 1999*
GDP at Factor Cost (millions of 1992 dollars)			
Total Economy	750,040	4.0	3.0
Goods	249,548	4.5	3.4
Agriculture	13,562	5.9	3.6
Forestry	4,554	7.5	0.5
Mining	26,721	(2.8)	1.3
Manufacturing	136,867	6.2	4.7
Construction	41,754	3.8	2.5
Services	500,492	3.8	2.9
Retail Trade	46,545	3.9	3.7
Transportation	30,598	5.1	3.9
Merchandise Trade (millions of dollars)			
Exports	360,598	11.9	9.6
Imports	326,662	7.7	9.5
Income (dollars)			
Personal Disposable Income per capita	18,716	2.6	1.9
Canadian Dollar (U.S. cents per unit)	67.3	(0.2)	(1.7)
Prices (1992 = 100)			
Total Economy	110.5	1.7	1.2
Consumer Price Index			
All Items	110.6	1.7	1.6
Transportation	124.5	3.3	2.9

Source: Statistics Canada, Cat. 11-010, 13-001, 15-001, 62-010; Bank of Canada

As shown in Table 2-1, production in the manufacturing sector rose by 6.2 per cent in real terms in 1999, fuelled by investment activity and consumption in Canada and the US. Both the motor vehicle equipment industry and the office machinery (e.g. computers) sectors experienced strong growth. Production in the primary goods industries dropped, as mining activity fell by 2.8 per cent. However, both agriculture and forestry activity increased. Construction activity increased by 3.8 per cent in 1999, after a flat year in 1998. Retail trade had a good year, with a 3.9 per cent increase. Transportation activity rose 5.1 per cent, a pace faster than the economy as a whole.

The US economy has been very strong in recent years and recorded real growth of 4.1 per cent in 1999. Consequently, merchandise export sales to the US were up 14.9 per cent in 1999 in current dollars. Mexico, Canada's other NAFTA partner, also benefited from the strong US economy, and its real GDP grew by 2.7 per cent in 1999. Canada's other trading partners have not demonstrated the same degree of strength. Western Europe had growth of 1.9 per cent and Canadian merchandise exports to that market rose by only 1.8 per cent. While the 1998 Asian financial crisis has been reversed, that region as a whole still recorded negative or negligible growth in 1999. Japan, the world's second largest economy, has not yet recovered completely from its recession, and real output there fell by 1.4 per cent in 1999. Consequently, Canada's merchandise exports to Japan fell by 3.2 per cent. South America continued to feel the effects of the Asian crisis, and real GDP fell 3.5 per cent in 1999 for the region. Figure 2-2 compares Canada's real GDP with that of other regions.

FIGURE 2-2: REAL GDP IN CANADA AND OTHER REGIONS

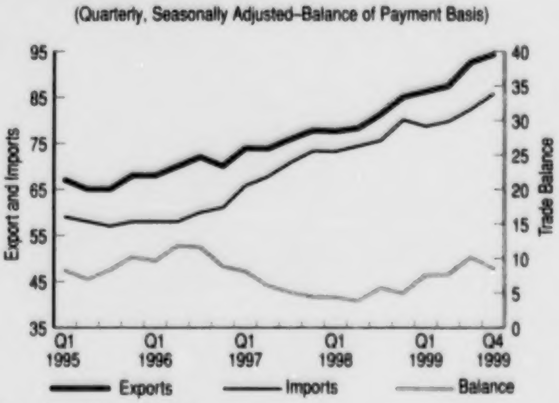


Source: Statistics Canada, Cat. 15-001, 11-010; U.S. Dept. of Commerce; IMF, Standard & Poor's DRI

As shown in Figure 2-3, Canadian merchandise exports grew 11.7 per cent overall in 1999, totalling $360.6 billion.

As the Canadian economy improved, Canadians bought more goods from abroad. Imports grew by 7.1 per cent to $325 billion, leaving a merchandise trade surplus of $34 billion, compared with $18.9 billion in 1998. Canada's trade surplus with the US rose to $55 billion.

FIGURE 2-3: MERCHANDISE TRADE



Source: Statistics Canada, Cat. 65-001

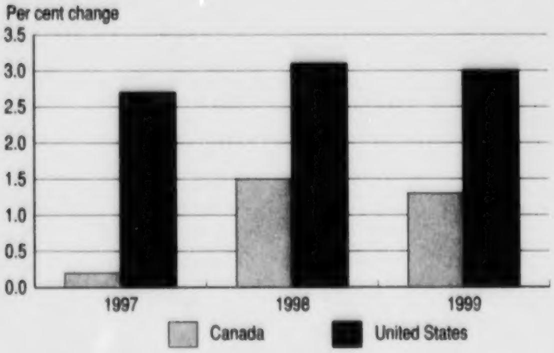
Automotive product exports increased by 26.4 per cent in 1999 and accounted for close to 27 per cent of Canada's exports. Other export sectors that showed large increases were energy (26.8 per cent), forestry (11 per cent) and machinery and equipment (eight per cent). In terms of imports, machinery and equipment accounted for 33 per cent. Automotive product imports rose by 13.7 per cent.

The Canadian dollar has risen from its low of US $0.6831 in August of 1998. As the Asian financial crisis diminished, commodity prices rebounded and exports grew. Prices went up, in general, by 1.7 per cent in 1999. Consumer transportation prices increased by 3.3 per cent, reflecting increases in energy prices.

Incomes have started to rise in Canada, reflecting the strengthening economy and the improved government fiscal position. As shown in Figure 2-4, real disposable income per capita rose 1.3 per cent in 1999. This is small by comparison with the increases in recent years in the US, but is still a significant improvement when compared with its relative stability during the past decade in Canada.

The strengthening of the Canadian dollar and the improvement in Canadians' income has resulted in increased international overnight travel to both the US (up 5.1 per cent) and overseas (up 0.8 per cent) in 1999. Domestic travel by Canadians also increased.

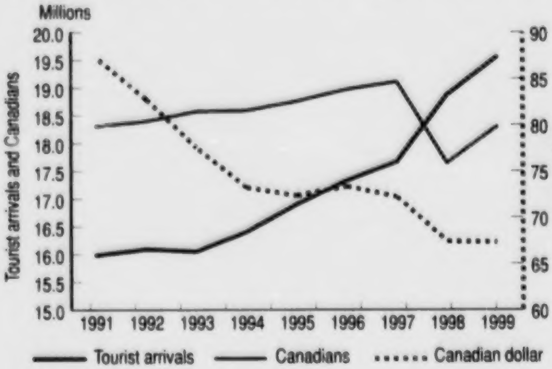
FIGURE 2-4: REAL PERSONAL DISPOSABLE INCOME PER CAPITA



Source: Statistics Canada, Cat. 13-001; US Department of Commerce

Figure 2-5 shows the amount of international overnight travel to Canada between 1991 and 1999.

FIGURE 2-5: INTERNATIONAL OVERNIGHT TRAVEL, 1991 - 1999



Source: Statistics Canada, International Travel Survey, Special Compilations; Bank of Canada

The number of foreign residents visiting Canada increased by 3.6 per cent in 1999, as the number of overnight visits to Canada increased from both American and overseas visitors. A combination of favourable exchange rates for the Canadian dollar and improved US incomes has brought large numbers of US visitors to Canada. As well, the improvement in the Asian region's economy has meant a return of tourists from that region.

OVERVIEW OF PROVINCIAL ECONOMIC PERFORMANCE

Newfoundland's economy experienced strong growth, fuelled by the offshore oil industry, the manufacturing sector, a rejuvenated fishing industry and tourism. Strong tourism, manufacturing and construction sectors were the driving forces behind Prince Edward Island's economy, while Nova Scotia's has been driven by wholesale sales, strong manufacturing activity and the development of the Sable Offshore Energy Project. Investment and tourism fuelled New Brunswick's growth. The Quebec economy outpaced the national average, with investment spending and housing being the main drivers. Indicators of economic activity all showed strong economic growth in Ontario, while agricultural output and mining problems eliminated any growth in Manitoba. Construction of the Alliance Pipeline Project in Saskatchewan partially offset a poor performance in the mining sector. High commodity prices energized Alberta's economy. British Columbia pursued its recovery with exports driven by the low Canadian dollar and rising commodity prices.

CANADA'S POPULATION AND TRANSPORTATION

A country's transportation needs, and the ways in which they change, are influenced by three population characteristics: geographical distribution, age group and urban/rural distribution.

GEOGRAPHICAL DISTRIBUTION

In 1999, there were 30.6 million people living in Canada. This population was concentrated (62 per cent) in central Canada (Ontario and Quebec). Alberta and British Columbia together made up another 23 per cent. Of the remaining 15 per cent, eight per cent lived in the Atlantic Provinces and seven per cent in Manitoba and Saskatchewan. Table 2-2 shows the breakdown of Canada's population by province/territory and by age.

TABLE 2-2: POPULATION BY PROVINCE/TERRITORY AND AGE

	Population (000s) 1999	*Per cent of Total*	*Average Growth (%) 1989–1999*	*Per cent by Age Group (1998)*	
				32-53	*65+*
Canada	30,568	100.0	1.1	34.6	12.3
Newfoundland	541	1.8	(0.6)	35.1	11.4
Prince Edward Island	138	0.5	0.6	32.6	13.0
Nova Scotia	941	3.1	0.4	34.5	13.2
New Brunswick	755	2.5	0.3	34.6	12.9
Quebec	7,363	24.1	0.6	35.7	12.4
Ontario	11,561	37.8	1.4	34.4	12.4
Manitoba	1,143	3.7	0.4	32.2	13.6
Saskatchewan	1,028	3.4	0.1	30.6	14.6
Alberta	2,969	9.7	1.8	34.5	9.9
British Columbia	4,029	13.2	2.3	35.0	12.7
Yukon	31	0.1	1.2	40.4	4.9
Northwest Territories	69	0.2	1.9	31.0	3.3

Source: Statistics Canada, Cat. 91-213

Canada, in common with most developed nations, has seen declines in both death and birth rates for several years now. This has resulted in a declining natural rate of population increase, which means that Canada now needs increasing immigration levels to maintain its population growth. From 1989 to 1998, the Canadian population grew by 1.82 million from net immigration and 1.76 million from more births than deaths. The natural yearly population increase has fallen from 201,696 in 1989 to 122,900 in 1998.

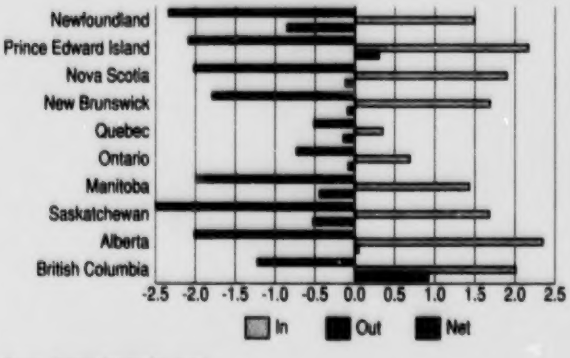
Canada's population, as a whole, has been growing at an average rate of 1.1 per cent per year for the past ten years. Ontario, Alberta and British Columbia have had the highest population growth. Newfoundland has seen negative growth, and Saskatchewan's levels have not changed. The other provinces have averaged growth rates of less than one per cent.

Immigration is important for Quebec, Ontario and British Columbia, while interprovincial migration is a significant factor for all provinces. Such migration has an effect on provincial population changes. It also leads to subsequent travel needs for visiting friends and relatives.

Figure 2-6 shows the inflow, outflow and net flow of interprovincial migration as a per cent of total provincial/territorial population. The total number of interprovincial migrants averages about 300,000 a year, or about one per cent of the total Canadian population. From 1989 to 1998, only Prince Edward Island, Alberta and British Columbia had a positive inflow of interprovincial migrants. Over the same period, Newfoundland and Saskatchewan had average net outflows of migrants that were, on average, over two per cent of each of these provinces' population. Ontario is the origin and destination of nearly half the interprovincial migrants in Canada. Young adults are most likely to move as they enter the workforce. The out-migration rate was 2.4 per cent for people aged 20 to 24 years and 1.9 per cent for those aged 25 to 34 years.

FIGURE 2-6: AVERAGE ANNUAL RATES OF INTERPROVINCIAL MIGRATION, 1989 – 1998

(Per cent of population)



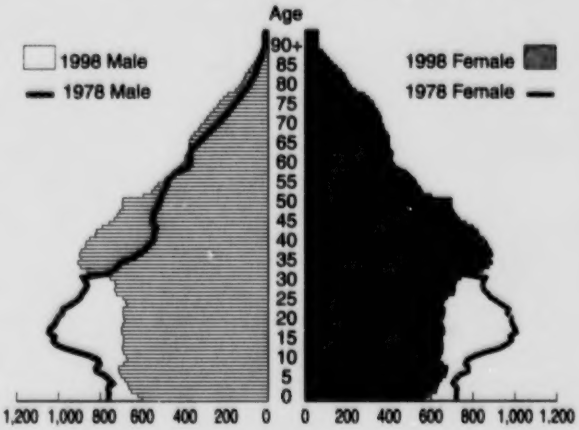
Source: Statistics Canada, Cat. 91-213

AGE GROUP

Lower birth rates and longer life expectancies explain, in part, the ageing of the Canadian population. Figure 2-7 shows a general upward shift in the age distribution. The median age of Canadians rose from 28.2 in 1978 to 36.0 in 1998. Over the same period, the proportion of young people fell from 24 per cent to 19.8 per cent and the proportion of older people rose from nine per cent to 12.3 per cent.

FIGURE 2-7: AGE PYRAMID OF THE CANADIAN POPULATION, 1978 and 1998

Size of annual cohorts (for a total population of 100,000)



Source: Statistics Canada, Cat. 91-213

Following World War II, between 1946 and 1965, almost ten million Canadians were born. These people, aged between 32 and 53 in 1998, correspond to what is referred to as the baby boom generation. In 1998, the members of this group accounted for 35 per cent of the Canadian population, up from only 25 per cent in 1978. As they grow older, they have an effect on all aspects of Canadian life, including transportation.

The age structure varies across Canada. Alberta and the territories have the lowest proportion of seniors, while Saskatchewan has the highest. The provinces where the baby boomers are most dominant are Newfoundland, Quebec, British Columbia and the Yukon Territory. (See Table 2-2.)

Table 2-3 shows the distribution of travel, both domestic and international, taken by Canadians by age group in 1998. It shows that most trips are taken by those between 25 and 64 years of age.

TABLE 2-3: CANADIAN TRAVELLERS BY AGE GROUP, 1998

(Per cent of total trips)

	Domestic		*International*	
Age Group	*Same Day*	*Overnight*	*to US (overnight)*	*Other Countries*
Total	100.0	100.0	100.0	100.0
Under 15	14.6	16.4	8.2	4.8
15-24	11.6	14.3	6.7	7.0
25-34	16.2	17.5	12.6	14.7
35-44	21.4	19.5	19.1	18.7
45-54	16.5	15.4	23.0	23.3
55-64	10.8	9.1	16.5	17.8
65+	8.8	7.9	13.9	13.8

Source: Statistics Canada, International Travel Survey and Domestic Travel Survey

In the past decade, there has been a noticeable increase in overseas travel by seniors. From 1990 to 1998, the number of overseas trips taken by seniors grew 78 per cent, compared with a 34 per cent increase in trips made by all age groups. The number of trips taken by seniors is expected to increase as the proportion of seniors in the Canadian population increases.

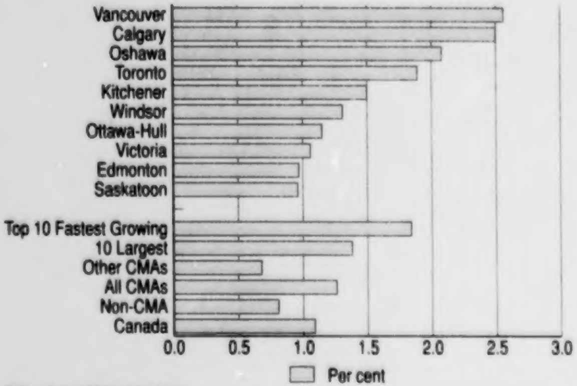
Members of the baby boom generation dominate both domestic and international travel. They account for the highest number of trips of all types except for domestic overnight trips, which is greater for the 25 to 34 age group. It is estimated that boomers and their children account for half of all domestic trips. During the 1990s, only seniors and the 45 to 54 age group, which contained the first wave of the baby boom generation, increased their number of overnight trips to the US.

URBANIZATION

The 1996 Census confirmed that Canada is now very much an urban nation, with 78 per cent of the population living in centres of 1,000 or more people. This level of urbanization has risen only slightly from 1976, when it was 76 per cent. However, the proportion of the population living in large metropolitan areas or Census Metropolitan Areas[1] has grown from 57 per cent to 62 per cent over the same period.

The tendency toward population concentration in large urban areas is evident from Figure 2-8. From 1991 to 1999, the ten fastest growing Census Metropolitan Areas grew at an average of 1.8 per cent a year, compared with 1.1 per cent for all of Canada and 0.8 per cent for the population not living in large urban areas.

FIGURE 2-8: AVERAGE ANNUAL CMA GROWTH RATES, 1991 - 1999



CMA = Census Metropolitan Areas

Source: Statistics Canada

Population concentration is greatest in the two largest metropolitan area regions: the Lower Mainland in British Columbia and the Golden Horseshoe area of southern Ontario. These regions made up seven per cent and 21.3 per cent, respectively, of the Canadian population in 1996.

The growth of large urban areas means that transportation systems must be in place both to allow goods and people to move around, and to allow people to travel between them and the other regions of the country.

Getting to work in large urban areas presents a special challenge. The extensive use of automobiles in concentrated areas causes problems of congestion and environmental impact, which are of particular concern. As Figure 2-9 shows, an automobile driven by one person is the most common means of transportation used by Canadians to get to work, no matter where they live. Seventy-three per cent of Canadians drive their own vehicles to work. This proportion is lower for those living in a Census Metropolitan Area (71 per cent) and lowest for those living in the Toronto area (65 per cent). Nearly seven per cent of working Canadians were "passengers." Public transit is used mostly in the large centres. Fifteen per cent of people living in Census Metropolitan Areas used public transit, and the usage rises only in the very large centres such as Toronto and Montreal, where 22 and 20 per cent of workers, respectively, used it to get to work in 1996. Seven per cent walked to work, while about two per cent used other means such as bicycle, motorcycle or taxi.

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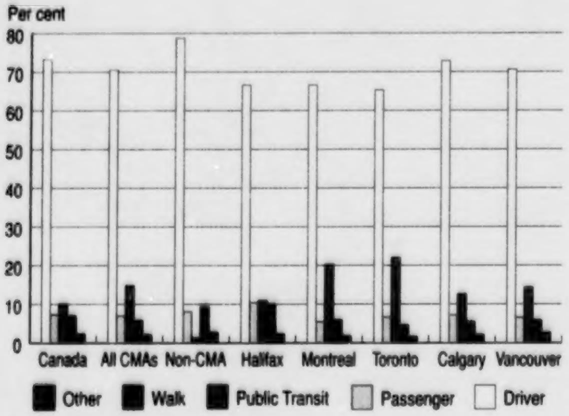
[1] Census Metropolitan Areas are large urban areas with a population of at least 100,000 people.

FIGURE 2-9: MODE OF TRANSPORTATION TO WORK

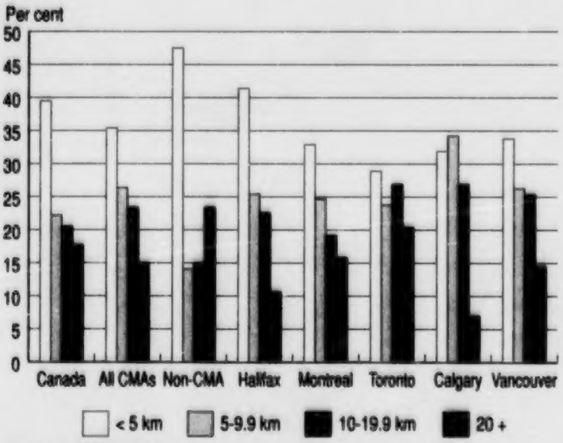


CMA = Census Metropolitan Areas

Source: Statistics Canada, 1996 Census

The median distance that Canadians travelled to get to work was seven kilometres in 1996. People living in the largest centres travel the farthest, as the median commuting distance was 9.3 kilometres in Toronto and 8.2 kilometres in Montreal. As Figure 2-10 shows, in general there is a negative relation between where people live and how far they travel to work. Close to 40 per cent of Canadians live within five kilometres of their workplace. In large centres, this percentage is about 35 per cent. Nearly half of workers living outside of large centres live within five kilometres of their workplace, but almost one quarter of them live over 20 kilometres away.

FIGURE 2-10: COMMUTING DISTANCE TO WORK



CMA = Census Metropolitan Areas

Source: Statistics Canada, 1996 Census

CONTRIBUTION OF TRANSPORTATION TO THE ECONOMY

Transportation can also be examined as an economic sector whose activities contribute to the performance of the economy as a whole. To measure transportation's relative contribution to the overall economy, however, the derived nature of its demand must be put aside.

The relative contribution of transportation to the economy can be assessed from a number of perspectives, including commercial (for-hire) activities and the demand for transportation services. For commercial transportation activities, the focus is on transportation firms that provide transportation services for moving either passengers or freight for a fee (e.g. airlines, railways, shipping lines and trucking firms). This has the disadvantage of not bringing together all transportation activities, as it excludes those internal to firms and for which there are no observable prices. When looked at in terms of transportation demand, the focus is on capturing all transportation-related expenditures, whether goods (e.g. transportation equipment) or services that allow for the movement of people and goods/freight. This includes all purchases related to transportation by households, private business and government.

COMMERCIAL TRANSPORTATION

The importance of commercial transportation, or transportation industries, can be assessed through value-added and employment measures. Employment is addressed in Chapter 7 of this report. Value-added can be defined as a firm's total sales minus the purchases of inputs from other firms. In other words, valued-added is what is available within a firm for the wages of its employees and the profits of its owners. It is an economic measure commonly used to assess an industry's relative importance to the economy. Its use avoids double counting; however, the travelling public and shippers do not purchase only the "value-added" by commercial transportation firms. Its application to transportation is equivalent to a rough equivalent of the supply of commercial transportation services.

In 1999, transportation industries accounted for 4.1 per cent of GDP. At 1.7 per cent, trucking accounted for the largest proportion of this, while at 0.3 per cent, the domestic marine industry accounted for the smallest proportion. In 1999, transportation industries continued to grow faster than the economy, as they have consistently over the last five years. In 1999, this growth was dominated by the freight transportation activities of trucking and rail. The continued strong growth in trucking was driven by trade expansion and the forces driving regional economic growth across the country. The growth in rail activity picked up in 1999, benefiting from the recovery in world commodity prices. Passenger transportation activities grew marginally in 1999, with all modal passenger activities (air, urban transit, rail) growing more slowly than the GDP. Industries supporting the transportation sector (e.g. freight forwarders) posted a net decline. Table 2-4 gives the breakdown of commercial transportation as a percentage of GDP.

TABLE 2-4: COMMERCIAL TRANSPORTATION AS A PROPORTION OF GDP AT FACTOR COST

Industries	(Millions of real 1992 dollars) *Value-added, 1999*	*Per cent of GDP*	*Per cent Annual Growth, 1994–1999*	*Per cent Annual Growth, 1998–1999*
Air	4,304	0.6	5.2	1.8
Rail	4,516	0.6	1.0	7.1
Marine	2,396	0.3	2.8	4.8
Truck	12,478	1.7	7.7	8.2
Public Passenger Transit[1]	3,333	0.4	0.5	1.8
Other Transport[2]	3,571	0.5	(1.0)	(0.2)
Transportation Industries	30,598	4.1	3.9	5.1
Total GDP	750,040	100.0	3.0	4.0

1 Public passenger transit refers primarily to urban transit, interurban bus, and taxi's.
2 Other transport refers primarily to freight forwarders and other supporting industries.

Source: Statistics Canada, Gross Domestic Product by Industry, Cat. 15-001-XPB.

TRANSPORTATION DEMAND

Transportation demand measures all transportation-related expenditures by households, businesses and governments on transportation goods (e.g. equipment) and services used in the movement of people and freight. It can be measured by the final demand method of calculating GDP (i.e. by the final demand for all goods and services in the economy). Final demand consists of the sum of personal expenditures, investment, government spending and the trade balance (exports minus imports).

As can be seen from Table 2-4, transportation demand represents a much larger share of the economy than that of commercial transportation activities in the GDP.[2] In 1999, transportation demand accounted for 13.2 per cent of GDP. The difference in these two approaches is a result of two factors: first, transportation demand is not limited to commercial activities; and second, transportation demand consists primarily of expenditures on transportation equipment (e.g. cars and trucks) and associated infrastructure (e.g. roads). It is the actual sums spent on these capital assets that is captured by this approach. Transportation equipment is the leading expenditure item in the sectors of exports, imports, personal expenditures and business investment. The amount spent on such capital assets is not indicative of the level of activity, however. In the government sector, the vast majority of transportation investment and spending is on roads. More detailed breakdowns of both personal expenditures and investment are provided in Appendices 2-1 and 2-2, while government expenditures are discussed in more detail in Chapter 3.

TABLE 2-5: TRANSPORT DEMAND AS A PROPORTION OF GROSS DOMESTIC PRODUCT

Industries	*(Millions of 1992 dollars) Expenditures 1999*	*Per cent of GDP*	*Per cent Annual Growth 1998–1999*	*Per cent Annual Growth 1994–1999*
1) Personal Expenditures on Transportation	**70,101**	**8.0**	**3.9**	**3.9**
New and Used Transportation Equipment	29,042	3.3	6.0	7.2
Repair and Maintenance Expenditures	9,849	1.1	0.9	0.1
Transportation Fuels and Lubricants	14,782	1.7	2.3	1.8
Other Services Related to Transportation Equipment	6,516	0.7	2.9	1.6
Purchased Commercial Transportation	9,912	1.1	4.0	4.4
2) Investment in Transportation	**24,853**	**2.8**	**17.2**	**7.5**
Business Investment in Transportation	*19,214*	*2.2*	*23.3*	*11.1*
Transportation Infrastructure (roads and railways)	1,162	0.1	(0.6)	1.6
Transportation Equipment	15,157	1.7	14.3	7.6
Inventories	2,895	0.3	152.4	(266.4)
Government Investment in Transportation	*5,639*	*0.6*	*0.1*	*(1.1)*
Transportation Infrastructure (roads)	5,059	0.6	0.1	(1.5)
Transportation Equipment	580	0.1	0.9	2.2
3) Government Spending on Transportation	**9,941**	**1.1**	**1.3**	**0.2**
Infrastructure Maintenance (roads)	5,241	0.6	1.3	0.2
Urban Transit Subsidies	2,318	0.3	1.3	0.2
Other Spending	2,382	0.3	1.3	0.2
4) Exports	**81,571**	**9.3**	**21.9**	**7.2**
Transportation Equipment, including parts	74,111	8.5	24.0	7.5
Commercial Transportation	7,460	0.9	4.2	4.1
5) Imports	**69,302**	**7.9**	**12.3**	**6.3**
Transportation Equipment, including parts	59,827	6.9	13.5	7.3
Commercial Transportation	9,475	1.1	5.1	1.0
Total Transport Related Final Demand (1+2+3+4-5)	**117,164**	**13.4**	**13.0**	**5.0**
Gross Domestic Product at Final Prices	***873,374***	***100.0***	***4.2***	***3.1***
Total Transport-Related Domestic Demand (1+2+3)	102,000	12.0	4.8	3.7
Final Domestic Demand	***848,278***	***100.0***	***3.9***	***2.9***

Source: Statistics Canada, National Income and Expenditure Accounts, 13-001-XPB, unpublished data, Income and Expenditure Accounts Division; Transport Canada estimates

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[2] It should be noted that transport demand will tend to underestimate the value of commercial transportation, since much of commercial freight transportation is an intermediate service whose cost becomes embedded in the price of other non-transportation demand goods (i.e. shoes, groceries, etc.). This indirect demand for commercial transportation will be addressed in next year's annual report.

Similarly to the value-added approach to commercial transportation activities, transportation demand grew faster in 1999 than the economy as a whole, with growth of 13 per cent, compared with five per cent annual growth over the last five years. This accelerated growth was largely due to increases in exports of, and business investment in, transportation equipment. In contrast, growth in transportation demand coming from personal expenditures and the government sector was below GDP growth, with growth in the government sector consistently behind GDP growth over the last five years.

A slightly different measure of the importance of transportation demand is final domestic demand, a measure of expenditures by Canadians consisting of personal expenditures, investment and government spending, but excluding foreign trade (exports and imports). This measure generates a somewhat lower estimate of the share of transportation demand, at 12 per cent of 1999 final domestic demand. This is shown in Table 2-4. This lower share is primarily a result of the exclusion of the trade surplus generated by exports of transportation equipment. In 1999, annual growth in transportation demand of 4.8 per cent also exceeded the growth in final domestic demand of 3.9 per cent. This was by a lesser extent than for final demand, again reflecting the exclusion of the high growth in transportation equipment exports in 1999.

APPENDIX 2-1

PERSONAL EXPENDITURES ON TRANSPORTATION, 1998

(Millions of 1992 dollars)

Personal Expenditures on Transportation	*1998 Value*	*Per Cent of Total*
New automobiles	10,748	15.3
Used motor vehicles (net)	6,364	9.1
New trucks and vans	10,287	14.6
Bicycles and motorcycles	2,022	2.9
Boats, aircraft, and accessories	810	1.2
Transportation Equipment Purchases	**30,231**	**43.0**
Motor fuels and lubricants	14,447	20.6
Motor vehicle parts and accessories	4,810	6.8
Motor vehicle maintenance and repairs	4,951	7.0
Driving licences, lessons and tests	2,190	3.1
Motor vehicle renting	540	0.8
Auto insurance	2,875	4.1
Transportation Equipment Operating Expenses	**29,813**	**42.4**
Bridge and highway tolls	116	0.2
Parking	609	0.9
Road Infrastructure Use Charges	**725**	**1.0**
Urban transit	1,360	1.9
Railway transport	129	0.2
Interurban bus	449	0.6
Air transport	5,885	8.4
Water transport	149	0.2
Taxis	443	0.6
Moving and storage	518	0.7
Commissions paid to tour operators	599	0.9
Commercial Transportation	**9,532**	**13.6**
Total Personal Expenditures on Transportation	**70,301**	**100.0**

Source: Statistics Canada unpublished data, Income and Expenditure Accounts Division

APPENDIX 2-2

TRANSPORTATION INVESTMENT BY INDUSTRY AND GOVERNMENT, 1997

(Millions of current dollars)

Types of Transportation	*Transportation Industries*	*Other Industries*	*Government*	*Total*	*Per Cent of total Investment*
Warehouses and Freight Terminals	80	346	0	426	1.5
Grain Elevators and Terminals	80	0	0	80	0.3
Maintenance Garages, Equipment Storage, Workshops	99	395	164	658	2.3
Railway Shops Engine Houses	18	0	0	18	0.1
Aircraft Hangars	1	0	94	95	0.3
Passenger Terminals	343	0	13	356	1.2
1. Transport-Related Building Construction	**621**	**741**	**271**	**1,633**	**5.6**
Marine engineering	173	17	264	454	1.6
Highways, Roads, Streets	77	231	4219	4,527	15.5
Airport Runways	107	0	37	144	0.5
Railway track	571	6	5	582	2.0
Bridges	198	14	267	479	1.6
Tunnels	22	1	0	23	0.1
Other Transportation	2	3	0	5	0.0
2. Transport-Related Engineering Construction	**1,150**	**272**	**4,792**	**6,214**	**21.3**
Industrial Containers	0	85	0	85	0.3
Automobiles	16	14,224	109	14,349	49.3
Buses	396	33	42	471	1.6
Trucks, Vans, Truck Tractors and Trailers	676	3,015	137	3,828	13.1
All-terrain Vehicles	0	238	2	240	0.8
Locomotives, Rail Rolling Stock, including Subways	788	65	0	853	2.9
Ships and boats	191	216	34	441	1.5
Aircraft and Helicopters	334	620	6	960	3.3
Other Transportation Equipment	1	43	1	45	0.2
3. Transportation Equipment	**2,402**	**18,539**	**331**	**21,272**	**73.1**
Total Transport-Related Investment (1 + 2 + 3)	**4,173**	**19,552**	**5,394**	**29,119**	**100.0**

Source: Statistics Canada, Capital Expenditures by Type of Asset, 1997, Cat 61-223

GOVERNMENT SPENDING ON TRANSPORTATION

3

Government spending on transportation has declined over the past five years at the federal and provincial/territorial levels, while it continues to increase on the local scene. However, Transport Canada's shift toward a policy and safety orientation, as well as divestiture and commercialization initiatives, has affected both expenses and revenues.

INTRODUCTION

This chapter describes the transportation expenditures and revenues of all three levels of government — federal, provincial/territorial and local. Where possible, expenditures and revenues are subdivided by mode.

The chapter begins by summarizing all transportation expenditures and revenues by levels of government. It then gives a synopsis of federal and provincial revenues from transportation users, followed by a detailed examination of consolidated expenditure by mode. Finally, it presents provincial/territorial and local government transportation expenditures.

GOVERNMENT TRANSPORTATION EXPENDITURES

This section covers spending on transportation by all levels of government and their agencies. Net expenditures are derived after taking into account the federal government revenues (other than fuel taxes) attributable to transportation users and government transfers received from other levels of government.

Table 3-1 shows that, over the past several years, total government net expenditures on transportation have consistently been in the $16–17 billion range. While the federal and provincial/territorial levels show no apparent pattern, the local government expenditures show a definite increase. From 1994/95 to 1998/99, net expenditures on transportation by local governments have increased, on average, by almost 2.5 per cent a year. Expenses by the provinces and territories increased by nine per cent in 1998/99, returning to the levels of the early 1990s.

TABLE 3-1: GOVERNMENTS' GROSS AND NET EXPENDITURES ON TRANSPORTATION

(Millions of dollars)

	1994/95	*1995/96*	*1996/97*	*1997/98*[4]	*1998/99*	*1999/2000*[5]
Transport Canada Expenses (Gross)[1]	2,976	3,448	2,472	2,428	1,415	1,178
Other Federal Expenses (Gross)	1,254	1,239	1,011	992	877	771
Transport Canada Revenues	1,021	1,211	1,353	987	658	353
Other Federal Revenues	0	15	31	40	42	51
Transport Canada Expenses (Net)	1,955	2,237	1,126	1,445	763	826
Other Federal Expenses (Net)	1,254	1,224	980	951	835	720
Cost Recovery of Federal Expenses (Per cent)	24.1	26.2	39.7	30.0	30.5	20.8
Provincial/Territorial[2]	7,642	7,762	7,141	7,232	7,881	N/A
Local Expenses[3]	5,960	6,333	6,388	6,323	6,571	N/A
Total	16,811	17,555	15,628	15,948	16,045	N/A
Dollars per capita	574	593	522	527	525	N/A

1 Includes in 1995/96 $1.1 billion to reduce the value of the CN debt to the Public Accounts of Canada.
2 Net of federal transfers as reported by the province.
3 Calendar year basis; net of federal and provincial transfers as reported by local governments.
4 Excludes non-budgetary write-off of $29 million.
5 Forecast at January 31, 2000 for full year.

Source: *Public Accounts of the Government of Canada; Transport Canada, Finance Directorate, the Canadian Transportation Agency; internal reports from several agencies and federal departments; provincial/territorial departments of transportation; Statistics Canada, Public Institutions Division, unpublished data basis*

Over the 1994/95 to 1998/99 period, net federal government expenses on transportation have been halved. Gross expenses by Transport Canada have been reduced by 52 per cent. Revenues dropped by 36 per cent, as a result of the divestiture of some airports and the elimination of the Air Transportation Tax (ATT) and other navigation fees from the federal government books. Prior to the airports being devolved, total revenues are included, while afterwards, only the lease payments to Transport Canada are shown. Other federal departments and agencies that have transport-related expenses include the Canadian Transportation Agency, the Civil Aviation Tribunal, Fisheries and Oceans Canada, Public Works and Government Services Canada, Heritage Canada (Parks Canada), the National Capital Commission, and Indian and Northern Affairs Canada. The transfers to Agriculture Canada of the adjustment for the elimination of the *Western Grain Transportation Act* (WGTA) subsidy, Treasury Board's infrastructure programs, and Public Works and Government Services Canada's Northumberland Strait Crossing are reflected in total expenditures by other federal agencies and departments. Over the period, gross transport expenses by all federal departments/agencies, other than Transport Canada, have fallen by 30 per cent.

Net expenditures on transportation by all levels of government in 1998/99 increased by $97 million, or 0.6 per cent, over the previous year's level. Both provincial and local governments showed an increase, while net transport expenses by the federal government fell by 33 per cent. Federal net transport expenses in 1999/2000 are expected to fall by $48 million, or three per cent.

The reduced share of federal expenditures recovered (20.8 per cent in 1999/2000 compared with 30.5 per cent in 1998/99) is tied to divestitures and commercialization initiatives. Former federal cost recovery responsibilities are now assumed by new entities.

TOTAL TRANSPORTATION REVENUES BY LEVEL OF GOVERNMENT

The federal government obtains revenues from the use of transportation facilities and services. Revenues from cost recovery are credited to a federal department's budget, while other revenues are credited to the government's Consolidated Revenue Fund. Both are included in this analysis. Excise fuel taxes collected by the federal and provincial governments, as well as provincial licence and other fees, constitute tax revenues collected from transport users. They are reported in Table 3-2.

In 1999/2000, federal government transport revenues, other than fuel taxes, are forecast to total $404 million, down from $700 million in the previous year and $1.0 billion in 1997/98. Most revenues originate from airport lease revenues, which should reach $263 million. Marine fees are to bring in an additional $79 million.

TABLE 3-2: GOVERNMENT REVENUES FROM TRANSPORT USERS

(Millions of dollars)

	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000[5]
Transport Federal Revenues other than Fuel Taxes						
Air Transportation Tax[1]	589	683	737	742	295	0
Airport Revenues	303	368	317	157	263	263
Aircraft Services	16	19	26	30	28	32
Other Air Fees	59	96	197	6	10	12
Marine Revenues[2]	23	18	73	68	73	79
Other Fees and Recoveries[3]	31	27	34	24	30	17
Total Credited	1,021	1,211	1,384	1,027	700	404
Other Government Revenues from Transport Users						
Federal Fuel Taxes	3,820	4,397	4,439	4,625	4,674	N/A
Provincial/Territorial	8,317	8,406	8,598	8,825	9,347	N/A
Fuel Taxes[4]	5,557	5,661	5,741	5,881	6,250	N/A
Licence Fees	2,760	2,745	2,857	2,944	3,097	N/A
Total Other Government Revenues	12,137	12,803	13,037	13,450	14,021	N/A

Note: More detail is available on Transport Canada's Web site (www.tc.gc.ca).

[1] Since 1996/97, the proceeds of the Air transportation Tax have been credited to the Consolidated Revenue Fund.

[2] Includes Coast Guard user fees, harbour fees, and sales of marine assets credited to the Consolidated Revenue Fund.

[3] Includes and inter- and intra-departmental transfers for services and various regulatory, licensing and administrative fees credited to either Transport Canada and the Consolidated Revenue Fund.

[4] The amounts shown exclude estimated provincial/territorial sales tax revenues.

[5] Forecast as of January 31, 2000, for full year.

Source: Transport Canada; Fisheries and Oceans Canada; provincial/territorial departments of transportation

The Air Transportation Tax (ATT) has not been credited to Transport Canada since 1996/97, but is included here because its proceeds were subsequently transferred to NAV Canada to finance its operations. The sunsetting of the ATT is responsible for the substantial revenue reduction in 1999/2000. Other revenues not credited to Transport Canada, such as those from the leases of hopper cars or the sale of port assets, are also reported in Table 3-2.

In 1998/99, revenues collected from transport users as fuel taxes, and permit and licence fees by the provincial/territorial governments, totalled $14 billion, an increase of 3.7 per cent over 1997/98. By far the largest component is fuel taxes, averaging 78 per cent of total government annual revenues from transportation from 1994/95 to 1998/99. Over the same period, the annual growth rate of fuel tax revenues and of licence and permit revenues was comparable.

FEDERAL EXPENSES RELATED TO TRANSPORT FACILITIES AND SERVICES

The federal government provides transportation facilities and services in all modes. As shown in Table 3-3, these include airports, port and harbour operations, modal safety and policy services, and services provided by the Canadian Coast Guard (now part of the Department of Fisheries and

TABLE 3-3: FEDERAL OPERATING, MAINTENANCE AND CAPITAL EXPENDITURES

(Millions of dollars)

	1996/97	*1997/98*	*1998/99*	*1999/2000*[8]
Airports	396	186	140	127
Air Navigation Systems	554	0	0	0
Aircraft Services	57	56	64	54
Coast Guard	540	523	471	514
Ports and Harbours[1]	90	85	84	97
Roads and Bridges[2]	175	169	156	148
Air Safety and Policy[3]	111	113	125	135
Marine Safety and Policy[4]	43	65	56	46
Road & Rail Safety and Policy	36	36	40	38
Multimodal Policy and Safety[5]	51	53	95	84
Other Services[6]	24	21	22	21
Other[7]	145	160	117	115
Total	2,223	1,467	1,370	1,379

Note: More detail available on Transport Canada's Web site (www.tc.gc.ca).

1 Includes expenses for small fishing ports by Fisheries and Oceans.
2 Includes contributions by Transport Canada to Jacques Cartier and Champlain bridges, and expenses by the National Capital Commission, Public Works and Government Services Canada, Parks Canada, and Indian and Northern Affairs Canada.
3 Includes expenses by the Civil Aviation Tribunal.
4 Increases in 1997/98 and 1998/99 related to the purchase of a ferry.
5 Includes expenses for regulation and the inspection of the transport of dangerous goods, and multimodal accident investigation, safety, policy and analysis.
6 Security and Emergency Preparedness; and Research and Development.
7 Corporate Services of Transport Canada and Canadian Transportation Agency.
8 Forecast at January 31, 2000, for full year.

Source: Transport Canada

Oceans). The federal government also performs several multimodal activities, including the investigation of accidents and the regulation and monitoring of the transport of dangerous goods.

Between 1996/97 and 1998/99, direct federal transport expenses fell from $2.2 billion to $1.4 billion. The transfer of the operations of the Air Navigation System (ANS) to NAV Canada accounts for 65 per cent of the decline. In 1999/2000, the operating and capital expenses of the federal government in transport are forecast to increase by 0.6 per cent from the 1998/99 levels.

The Canadian Coast Guard now represents the largest single federal transport expense ($514 million by 1999/2000). The costs of operating federal ports and airports should reach $224 million by 1999/2000, down from $489 million in 1996/97. This reflects divestiture initiatives. Expenditure on safety and policy are forecast to reach $303 million by 1999/2000, up from $249 million in 1996/97, in accord with Transport Canada's increased orientation to a policy and safety role. Direct expenses on roads are forecast to fall from $175 million in 1996/97 to $148 million in 1999/2000.

FEDERAL SUBSIDIES TO TRANSPORTATION

Total direct federal subsidies, grants and contributions in 1999/2000 are projected to be $570 million, 38 per cent less than in 1998/99. This major reduction can be explained by the elimination of payments to NAV Canada and by the decline in highway transfers as transition and infrastructure programs are finishing. Since 1995/96, subsidies and transfers have fallen by more than 50 per cent. Subsidies to freight transport and ferry operations were either eliminated or substantially reduced. Highway transfers were also reduced. Table 3-4 gives more detail.

TABLE 3-4: DIRECT FEDERAL SUBSIDIES, GRANTS AND CONTRIBUTIONS BY MODE

(Millions of dollars)

	1995/1996	1996/1997	1997/1998	1998/1999	1999/2000[5]
Air Mode					
Airport (Operation & Capital)	30.9	35.2	46.2	45.0	45.3
NAV Canada	0.0	291.7	685.8	215.8	0.0
Other	5.0	3.6	13.8	0.5	0.4
Total Air	35.9	330.5	745.9	261.3	45.7
Marine Mode					
Marine Atlantic Ltd.	100.0	97.2	91.3	29.1	28.6
Other Crown Corporations	6.9	2.5	0.7	10.4	1.6
Port Divestiture Fund	0.0	0.9	5.7	6.7	25.5
Other Ferry and Coastal Services	49.8	30.3	31.2	28.8	29.2
Other	14.0	16.8	5.7	4.6	2.8
Total Marine	170.7	147.8	134.6	79.5	87.6
Rail Mode					
Terminated Freight Subsidies[1]	221.7	0.0	0.0	0.0	0.0
Hopper Cars	18.2	17.1	19.0	21.0	21.0
VIA Rail	301.0	235.8	216.2	200.5	170.3
Other Passenger Services	9.7	5.2	6.5	6.5	7.1
Grade Crossings	8.2	7.4	7.5	7.2	7.5
Other	4.4	1.8	1.6	1.8	1.4
Total Rail	563.2	267.3	250.8	236.9	207.3
Highway Modes					
Atlantic Region Freight Assistance Program	35.4	0.0	0.0	0.0	0.0
Transition Programs[2]	48.7	98.5	485.6	93.4	59.8
Highway Agreements	207.7	201.1	152.2	125.9	101.1
Infrastructure Program	193.0	193.2	122.0	71.2	0.0
Fixed Link in P.E.I.[3]	0.0	13.3	52.6	44.3	46.8
Other	12.5	8.3	9.1	9.7	21.2
Total Highway Modes	497.3	514.4	821.5	344.5	228.9
Grand Total[4]	**1,267.1**	**1,260.1**	**1,953.1**	**922.5**	**569.6**

Note: More detail is available on Transport Canada's Web site (www.tc.gc.ca).

1 WGTA, MFRA and Branch Lines.
2 Offset federal programs to the elimination of WGTA and ARFA Programs; Labrador ferry service buyout in 1997/98.
3 Payments made by the Department of Finance, Public Works and Government Services, and Transport Canada.
4 Includes subsidies not elsewhere classified.
5 Forecast as as January 31, 2000 for full year.

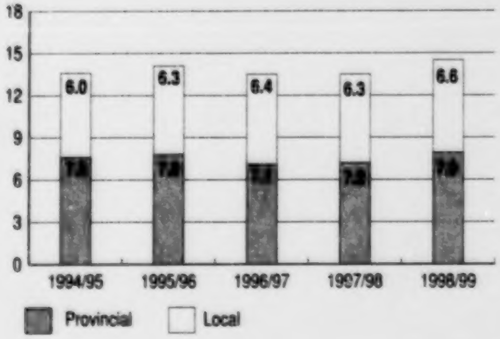
Source: Main Estimates and Public Accounts of the federal departments concerned

DISTRIBUTION OF PROVINCIAL/TERRITORIAL AND LOCAL EXPENDITURE BY PROVINCE

In 1998/99, provincial/territorial and local governments' spending on transportation amounted to $14.5 billion. This was a 6.6 per cent increase from 1997/98 and reversed two consecutive years of decline. The 1998/99 spending levels are higher than in 1995/96. Figure 3-1 illustrates the trends in provincial and local transport expenses from 1994/95 to 1998/99. Table 3-5 also gives more details.

FIGURE 3-1: PROVINCIAL/TERRITORIAL AND LOCAL EXPENSES IN TRANSPORT

(Billions of dollars)



Source: Transport Canada

Since 1994/95, transport spending by provincial and local governments has increased by 6.3 per cent. The largest increases were recorded in Prince Edward Island, Saskatchewan and Newfoundland. Expenditures have declined only in Quebec.

Federal transfers are equivalent to 2.7 per cent of transport spending by local and territorial governments. In 1998/99, Newfoundland was the province most dependent on federal transfers, which accounted for more than 24 per cent of its spending on transport. Table 3-6 shows more data on transport expenditure and revenues by mode and level of government.

Spending on roads and highways is the most important category of transport-related expenditure for all provinces, although other modes are equally important for some. The proportion for road and highway spending ranged from almost 100 per cent in Prince Edward Island, to only 44 per cent in the Northwest Territories, which spends more on air transportation (38 per cent) because of its remoteness.

Transit spending is the most substantial in Ontario, where it accounts for 24 per cent of provincial and local transport expenditures. High levels of spending on transit in Ontario reflect the settlement of commitments made prior to services realignment. Expenditures on transit are also significant in Quebec, where this sector represents 18 per cent of the local and provincial transport budgets.

TABLE 3-5: DISTRIBUTION OF PROVINCIAL/TERRITORIAL [A] AND LOCAL [B] EXPENDITURES BY PROVINCE

Net Expenditure (Millions of dollars)

	Air, Water and Rail		*Provincial roads*		*Local/urban roads*[1]		*Transit*[2]		*Other*[3]		*Total*		***All Federal Transfers***	
	1994/95	*1998/99*	*1994/95*	*1998/99*	*1994/95*	*1998/99*	*1994/95*	*1998/99*	*1994/95*	*1998/99*	*1994/95*	*1998/99*	*1994/95*	*1998/99*
Newfoundland	0	27	106	115	75	79	6	5	0	0	187	226	91	71
Prince Edward Island	0	0	52	68	7	10	0	0	0	0	59	78	7	9
Nova Scotia	5	5	210	146	60	124	11	15	3	5	289	296	35	47
New Brunswick	12	12	306	304	100	99	7	6	0	5	425	426	57	35
Quebec	49	44	1,006	1,227	1,653	1,432	612	594	121	95	3,441	3,392	36	25
Ontario	49	16	2,121	1,613	1,623	1,923	883	1,197	100	191	4,776	4,939	63	48
Manitoba	8	11	222	255	212	213	51	49	9	23	502	552	20	5
Saskatchewan	4	5	223	242	199	257	14	20	1	12	442	536	9	15
Alberta	5	2	632	677	676	795	163	200	30	45	1,507	1,718	16	14
British Columbia	39	25	975	1,075	533	694	252	298	16	26	1,815	2,119	3	14
Northwest Territories	33	43	46	32	10	9	1	1	0	9	89	94	5	1
Yukon	1	7	45	40	17	21	0	0	8	8	72	77	40	12
Total	**205**	**197**	**5,943**	**5,795**	**5,165**	**5,656**	**2,001**	**2,385**	**288**	**419**	**13,602**	**14,452**	**382**	**295**

Note: More detail is available on Transport Canada's Web site (www.tc.gc.ca).

[1] Roads and streets, parking and snow removal.

[2] Net expenditures by the provinces and local expenditures netted against estimated transfer from the provinces.

[3] Includes some local expenditure on communication and modes other than roads and transit systems.

Sources:

[A] *Provincial/territorial departments of transport; Transport Canada. Many provinces have moved to unconditional grants to local governments. For this reason, transportation transfers may be underreported. Net expenses by local governments are only netted of transfers reported by provincial governments.*

[B] *Derived from Statistics Canada, Public Institutions Division; data are on a calendar year basis.*

OVERVIEW OF EXPENDITURES AND REVENUES BY MODE

This section summarizes consolidated federal expenses and revenues by mode over the 1996/97 to 1999/2000 period. It also shows expenditures by other levels of government, netted against transfers received from other levels of government, from 1996/97 to 1998/99. Table 3-6 gives detailed information on this.

In 1998/99, the air mode accounted for four per cent of gross spending on transportation, a decline of 57 per cent since 1996/97. Aviation users contributed the most, 85 per cent, to government revenues. As a result, net spending in aviation was only 0.5 per cent of net government transport expenditure in 1998/99.

Spending in the marine mode is responsible for about five per cent of government annual transport spending in 1998/99. Since 1996/97, expenses have been reduced by 12 per cent. Revenues from users were the same in 1998/99 as in 1996/97. However, they are projected to increase by nine per cent in 1999/2000.

Rail mode spending has fallen by 14 per cent since 1996/97. In 1998/99, it accounted for only 1.5 per cent of gross government spending on transportation. While most of the outlays are subsidies, revenues accrue in large part from the leasing of hopper cars. Recently, the provinces have reduced their spending on rail transport to less than $2 million a year.

Total spending on roads and transit systems was close to $14.4 billion in 1998/99, 2.1 per cent more than in 1997/98. Since 1996/97, the growth has been 2.2 per cent a year. Public expenses on transit systems have grown at a faster rate, 9.3 per cent, to reach $2.4 billion in 1998/99. This is one of the few transportation expenditure components that has shown a regular increase. In 1998/99, spending on roads and transit systems accounted for nearly 90 per cent of all net government expenditures on transportation.

The federal role in roads and transit systems consists of contribution to federal-provincial cost shared agreements, overseeing the management of the Confederation Bridge, and small road programs managed by federal departments other than Transport Canada; the maintenance of two Montreal bridges; a safety and policy function; transfer payments to provincial or local authorities; and small grants/subsidies to road users. Altogether, these expenses fell to $525 million in 1998/99, a drop of 48 per cent from the previous year. Expenses are expected to further fall to $400 million in 1999/2000.

TABLE 3-6: TRANSPORT EXPENDITURE/REVENUES BY MODE AND LEVEL OF GOVERNMENT

(Millions of dollars)

	1996/97	*1997/98*	*1998/99*	*1999/2000*[1]
Federal O&M, Capital and Subsidies[A]				
Air	1,456	1,115	597	368
Marine	822	810	691	747
Road	288	276	256	226
Rail	711	1,013	525	400
Other	206	206	223	208
Sub-Total	3,483	3,420	2,293	1,949
Provincial/Territorial/ Local[B]				
Air	97	76	74	N/A
Marine	100	91	121	N/A
Rail	11	2	2	N/A
Road	11,051	10,993	11,452	N/A
Transit	1,993	2,058	2,384	N/A
Other	276	321	419	N/A
Sub-Total	13,529	13,541	14,452	N/A
Total Expenses: All Government Levels				
Air	1,553	1,191	671	N/A
Marine	922	901	812	N/A
Rail	299	278	258	N/A
Road/Transit	13,756	14,065	14,361	N/A
Other	482	527	641	N/A
Sub-Total	17,012	16,961	16,744	N/A
Federal Transportation Revenues[C]				
Air	1,277	935	597	307
Marine	73	68	73	79
Road/Rail	0	12	13	9
Other	34	12	18	9
Total	1,384	1,027	700	404
Net Transportation Expenses				
Air	276	256	74	N/A
Marine	849	833	740	N/A
Rail	299	266	246	
Road/Transit	13,756	14,065	14,361	N/A
Other	448	515	624	N/A
Total	15,634	15,934	16,044	N/A

Note: More detail is available on Transport Canada's Web site (www.tc.gc.ca).

1 Forecast as at January 31, 2000, for full year.

Sources:

A Transport Canada; Main Estimates and Public Accounts of the federal departments concerned.

B Provincial/territorial departments of transportation; Transport Canada. Many provinces have moved to unconditional grants to local governments. For this reason, transportation transfers may be underreported. Net expenses by local governments are only netted against transfers reported by provincial governments. Statistics Canada, Public Institutions Division; data are on a calendar year basis.

C Transport Canada; Fisheries and Oceans Canada; provincial/territorial departments of transportation.

The category "Other" in Table 3-6 includes overhead expenses by all levels of government expenditures related to multimodal policy, safety and economic analysis functions, as well as other activities such as Transport Canada's Security and Emergency Preparedness, and Research and Development. About four per cent of total net transport expenses are allocated to this category. Most of the revenues are recoveries from other departments for the provision of research projects or from fines and permits issued by Transport Canada.

TRANSPORTATION AND SAFETY

4

The safety and security of Canada's transportation system continues to be a top priority for the federal government. This commitment is reflected in all of Transport Canada's activities.

Transport Canada's focus is on developing practical safety programs and effective regulations, and on ensuring that these regulations and standards are followed. In particular, it regulates and co-ordinates safety-related matters in several areas: aeronautics and airports; air and marine navigation; marine shipping facilities; commercial shipping; new motor vehicle standards; railways; bridges and canals connecting provinces with each other or with the US; and transportation of dangerous goods.

Responsibility for transportation safety in Canada involves many stakeholders, including the federal, provincial, territorial and municipal governments, industry and non-governmental organizations. Transport Canada works closely with all stakeholders to ensure high standards in transportation safety, but especially with the Transportation Safety Board and the provincial governments to maintain nationwide system safety. Transport Canada also works with foreign government agencies and organizations on several international safety initiatives.

This chapter describes recent trends in occurrence statistics for all modes of transport as well as the transportation of dangerous goods.

TRANSPORTATION OCCURRENCES

Record lows in the number of occurrences in aviation and on the road made 1999 a particularly successful year in transportation safety. This was despite marginal increases in the rail and marine sectors. The aviation sector saw the fewest accidents involving Canadian-registered aircraft in the last 25 years, at 340. Likewise, road collisions also represented the lowest number during this period, at 150,919 in 1998. While the number of marine accidents was up marginally, seven per cent over 1998, it was still 16 per cent below the five-year average. The number of rail accidents was also up slightly over 1998 levels, five per cent, yet remained below the comparable five-year average by six per cent. Despite these increases in rail and marine occurrences, the overall accident rate continued its downward trend.

These somewhat mixed results in terms of accidents/collisions were tempered by the fact that the number of fatalities fell significantly in each of the four major modes. Fatalities in air, marine and road each registered double-digit reductions from the five-year average of 20, 17 and 11 per cent, respectively, while rail fatalities were down six per cent. Overall, fatalities were 11 per cent lower than the five-year average.

These comparisons can be misleading, however, as they do not take into account the specifics of each mode, nor do they reflect the level of activity or exposure to risk associated with each.

Table 4-1 compares the most recent statistics on transportation occurrences by mode with the five-year average.

The accident rates shown for 1999, which attempt to take into account the level of activity in each mode, continued either to exhibit a general downward trend or were consistent with the five-year average. (Reliable activity measures for motor vehicles are not available.) While the accident rate for aviation was more than one full point below the five-year average (1.3), those for marine and rail were consistent with the five-year trend.

TABLE 4-1: TRANSPORTATION OCCURRENCES BY MODE 1999 vs FIVE-YEAR AVERAGE (1994 – 1998)

	Aviation	*Marine*	*Rail*	*Road*[1]
Accidents				
Most recent year	340	525	1,129	150,919
Five-year average	371	624	1,196	161,095
Fatalities				
Most recent year	67	29	105	2,927
Five-year average	84	35	111	3,277
Incidents				
Most recent year	701	171	334	N/A
Five-year average	677	176	471	N/A

[1] 1998 Canadian Motor Vehicle Traffic Collision Statistics (the most recent statistics available) and for the 1993 – 1997 period; road fatalities are for 1997. All other modes are for the 1994 – 1998 period.

Source: Transportation Safety Board

Table 4-2 compares accident and fatality rates by mode for 1999 with the five-year average.

TABLE 4-2: ACCIDENT RATES IN TRANSPORTATION 1999 vs FIVE-YEAR AVERAGE (1994 – 1998)

	Aviation[1]	*Marine*[2]	*Rail*[3]	*Road*
Accidents				
Most recent year	8.3	4.4	15.2	N/A
Five-year average	9.6	4.4	15.6	N/A

[1] Canadian registered aircraft only (per 100,000 hours flown).

[2] Per 1,000 commercial vessel movements (Canadian flag vessels only).

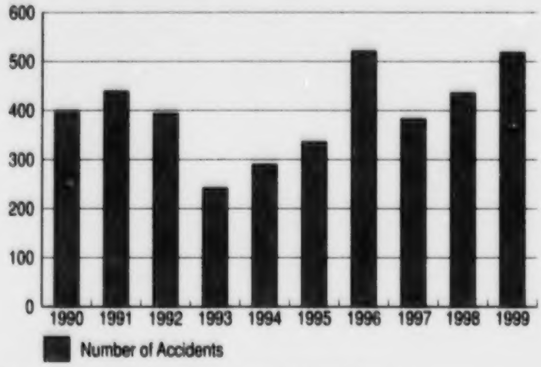
[3] Per million train-miles.

Source: Transportation Safety Board

These aggregate measures of activity are intended to provide a point of reference in interpreting the occurrence statistics; however, each has its inherent limitations. In rail, for example, the measure of train-miles captures only that activity that occurs on main-track lines and does not extend to yards, spurs and sidings. Since roughly half the rail occurrences take place on non-main track areas, this tends to overstate the actual accident rate. Similarly for marine, measures of trip movements and vessel movements do not directly take into account the overall distance travelled. Accident rates for aviation can vary significantly whether measured through flying hours, aircraft movements or licences.

Figure 4-1 shows the number of transportation of dangerous goods reportable accidents for the period 1990 to 1999.

FIGURE 4-1: REPORTABLE ACCIDENTS INVOLVING DANGEROUS GOODS, 1990 – 1999



Source: Transport Canada, Dangerous Goods Accident Information System

RAIL

DOMESTIC OPERATIONS

The statistics presented in this section include all railways under federal jurisdiction.[1]

There were 1,129 rail-related accidents reported to the Transportation Safety Board in 1999. While this was up five per cent from the 1998 total of 1,076, it was still a decrease of six per cent from the five-year average of 1,197. The increase in the number of accidents, coupled with a marginal decrease in total train-miles, was reflected in a higher accident rate per million train-miles in 1999 of 15.2 over the 1998 rate of 14.3. Nonetheless, it was slightly better than the rate for the 1994 – 1998 five-year average of 15.6.

With the exception of main-track and non-main-track collisions, all accident types contributed to the increase in 1999. Of the total rail-related accidents, non-main-track train derailments accounted for the largest portion, with 36 per cent. Crossing accidents followed at 25 per cent and main-track train derailments at 11 per cent. The increase in non-main-track train derailments was mainly attributable to accidents involving single-car derailments in a yard, spur or siding, occurring at relatively slow speeds and with a low associated public risk.

Approximately 50 per cent of all main-track train derailments in 1999 resulted in either one or two cars derailing, and 12 per cent involved dangerous goods. Accidents involving a dangerous goods product represented 20 per cent of the total rail accidents in 1999, down seven per cent from the previous five-year average. The number of accidents involving a release of dangerous goods product remained at roughly one per cent of the total.

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[1] Since the passage of the *Canadian Transportation Act* on July 1, 1996, a growing number of federal rail lines have been transferred to other operators that now report to provincial jurisdictions. These provincial short-line operators now constitute upwards of 18 per cent of the total rail network in Canada.

A total of 334 incidents was reported to the Transportation Safety Board in 1999, down 24 per cent from the 440 reported in 1998, and down 29 per cent from the five-year average of 471. The majority of these incidents (50 per cent) involved dangerous goods cars leaking a product, but not as a result of an accident.

Table 4-3 summarizes rail accidents reported for the five-year period 1995 – 1999.

TABLE 4-3: ACCIDENT RATES IN RAIL TRANSPORTATION, 1995 – 1999

Year	*Number of Accidents*	*Accident Rate*[1]	*Fatalities*	*Serious Injuries*
1995	1,276	16.6	120	132
1996	1,305	17.6	117	129
1997	1,116	14.5	109	101
1998	1,076	14.3	101	73
1999	1,129	15.2	105	94
1994–1998 Average	1,197	15.6	112	112

Note:

1 Number of accidents per million train-miles.

Source: Transportation Safety Board

In 1999, 105 people were fatally injured in rail-related accidents, up from 101 in 1998 but down from the five-year average of 112. The 1999 total of 97 fatal accidents represented a slight decline from the 1998 total of 98 and was below the five-year average of 103. The majority of the fatalities (93 per cent) were related to accidents involving trespassers (58 per cent) or associated with rail grade crossing accidents (35 per cent). The number of crossing accidents involving passenger trains remained relatively consistent in 1999 compared with the five-year average. Transport Canada, in partnership with its stakeholders, has several programs to address these safety concerns. Direction 2006, for example, is a major initiative aimed at reducing the number of trespasser and crossing fatalities by 50 per cent by the target year.

There was a total of 282 crossing accidents in 1999, a three per cent increase from the 1998 total of 273. The 1999 total remained well below the five-year average of 343. Although the number of rail-crossing accidents increased in 1999, that of fatalities and serious injuries was slightly lower than in the previous year and considerably lower than the five-year average.

Table 4-4 shows the number of railway crossing accidents by province from 1995 to 1999.

TABLE 4-4: CROSSING ACCIDENTS BY PROVINCE, 1995 – 1999

Province	*1995*	*1996*	*1997*	*1998*	*1999*
Newfoundland/Prince Edward Island/ Nova Scotia (167)	5	8	5	3	7
New Brunswick (316)	12	6	5	2	4
Quebec (2,478)	58	61	51	48	50
Ontario (5,229)	121	91	75	65	94
Manitoba (3,038)	33	46	30	34	19
Saskatchewan (6,437)	44	49	33	38	30
Alberta (3,705)	66	71	70	54	52
British Columbia (1,039)	40	33	38	29	25
Canada[1] (22,424)	**379**	**365**	**307**	**273**	**282**
Crossing Fatal Accidents	39	39	30	38	32
Passenger Train Related Accidents	26	40	30	29	31

Note: Figures in brackets denote estimated number of public crossings in each province as of January 1999.

1 Includes one accident in the Northwest Territories in 1999.

Source: Transportation Safety Board

The number of crossing accidents at automated crossings remained relatively constant at 45 per cent of the total crossing accidents in 1999. Although automated crossings accounted for the largest portion, this form of protection is generally in areas with relatively high motor vehicle traffic. The increase in 1999 can be attributed in part to crossing accidents occurring at non-automated farm crossings, where the number of accidents doubled to 10 in 1999 from five in 1998.

Table 4-5 summarizes trespasser accidents by province from 1995 to 1999.

TABLE 4-5: RAIL TRESPASSER ACCIDENTS BY PROVINCE, 1995 – 1999

Province	*1995*	*1996*	*1997*	*1998*	*1999*
Newfoundland/Prince Edward Island/ Nova Scotia	0	4	0	0	0
New Brunswick	6	3	0	0	0
Quebec	27	32	15	12	26
Ontario	41	55	47	36	46
Manitoba	13	1	4	4	1
Saskatchewan	3	3	4	2	3
Alberta	13	8	7	10	10
British Columbia	9	21	21	14	8
Canada	**112**	**127**	**98**	**78**	**94**
Fatal Trespasser Accidents	63	67	69	59	60
Passenger Train Related Accidents	23	28	24	25	23

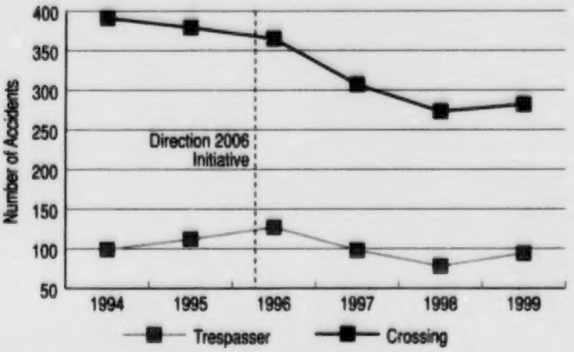
Source: Transportation Safety Board

The number of trespasser accidents rose to 94 in 1999 from 78 in 1998, but remained well below the five-year average of 103. The majority of these accidents occurred in the Ontario and Quebec, 49 and 28 per cent, respectively. The number of fatal trespasser accidents remained relatively constant at 60, slightly below the five-year average of 62. Two thirds of all rail-related fatal accidents were a result of trespasser accidents, a consistent ratio during the past five years.

Through public awareness and education programs, monitoring and enforcement, safety programs and research, Transport Canada will continue to address the issues related to reducing accidents. In additional to Direction 2006, Transport Canada also continues to support the Operation Lifesaver Program, which focuses on education and public awareness.

Figure 4-2 plots the number of crossing and trespasser accidents since the launch of the Direction 2006 initiative in 1996. Significant reductions were achieved (particularly in grade crossing accidents) in the period immediately following the launch; the trend has slowed more recently, however.

FIGURE 4-2: NUMBER OF CROSSING AND TRESPASSER ACCIDENTS SINCE DIRECTION 2006, 1994 – 1999



Source: Transportation Safety Board

Two rail accidents in 1999 warranted particular attention. The first occurred in Thamesville, Ontario, where a VIA passenger train collided with stationary rail cars containing dangerous goods products. Two employees were fatally injured, and some train passengers suffered injuries.

The second occurred in St. Hilaire, Quebec, where 33 cars of a CN train carrying petroleum products derailed. A second CN freight train struck the derailed cars, which were obstructing their way, with a resultant 26 additional cars and two locomotives also derailing. Two crew members sustained fatal injuries and fires and explosions were reported. In addition, 350 people from the town of St. Hilaire were evacuated because of heavy smoke.

ROAD

The most recent annual data on motor vehicle traffic collision statistics is 1998 for fatalities, injuries and casualty collisions and 1997 for property damage only collisions.

DOMESTIC OPERATIONS

Canada's road safety record has continued to improve steadily over the last several decades. In 1998, there were 2,927 fatalities resulting from motor vehicle accidents, the lowest annual total in 43 years. (Statistics of this nature have been recorded since 1945.) The number of road-related fatalities was down 4.5 per cent from 1997 and was significantly below (10.7 per cent) the 1993–1997 average.

Table 4-6 gives the national number of road-related casualty collisions, fatalities and injuries from 1993 to 1998.

TABLE 4-6: TOTAL ROAD CASUALTY COLLISIONS AND PERSONS INJURED OR KILLED, 1993 – 1998

Year	*Casualty Collisions*	*Persons Killed*	*Persons Injured*
1993	171,227	3,615	247,588
1994	169,649	3,263	245,110
1995	167,044	3,351	241,935
1996	158,990	3,091	230,890
1997	152,765	3,064	221,349
1998	150,919	2,927	217,614
1993 – 1997 Average	163,935	3,277	237,374
Percentage change 1998/Average	(7.9)	(10.7)	(8.3)
Percentage change 1997–1998	(1.2)	(4.5)	(1.7)

Source: 1998 Canadian Motor Vehicle Traffic Collision Statistics

Casualty collisions include all reportable motor vehicle accidents that result in a fatality or an injury. The steady downward progression has continued, with the national total falling 1.2 per cent from 1997 and 7.9 per cent from the 1993–1997 five-year average. The number of fatalities also declined in 1998, standing at 4.5 per cent below the 1997 level and 10.7 per cent below the comparable five-year average.

Table 4-7 shows the number of road fatalities in Canada classified by six major types of road users.

All categories, with the exception of bicyclists and motorcyclists, contributed to the continued overall decline in fatalities between 1993 and 1998. The category "drivers," which represents the single largest segment of the road user population, also accounts for the largest share

TABLE 4-7: ROAD FATALITIES BY CATEGORY OF ROAD USER, 1993 – 1998

	1993	1994	1995	1996	1997	1998	1993 – 1997 Average
Drivers	1,772	1,626	1,652	1,518	1,540	1,479	1,622
Passengers	959	851	920	825	812	729	873
Pedestrians	479	429	416	465	402	401	438
Bicyclists	81	86	64	60	67	76	72
Motorcyclists	216	163	166	128	123	166	159
Other[1]	108	108	133	95	120	76	113

[1] Other refers to any other type of road user not otherwise stated (e.g. snowmobiles) and also includes instances where road user type is not stated.

Source: 1998 Canadian Motor Vehicle Traffic Collision Statistics

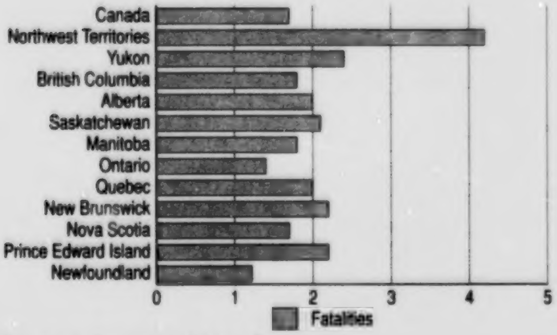
of road fatalities. In 1998, this category of road user accounted for 51 per cent of total road fatalities, while "passengers" and "pedestrians" accounted for 25 per cent and 14 per cent, respectively.

From 1996 to 1998, the highest fatality rates in Canada were in the Northwest Territories and the Yukon, reflecting the relatively low number of vehicles registered in those territories and the more difficult driving conditions. Ontario, with the largest road network and the highest number of vehicle registrations, continued to have one of the lowest fatality rates during this period at 1.4 per 10,000 vehicles registered, behind Newfoundland at 1.2.

Figure 4-3 compares road fatality rates by province from 1996 to 1998.

FIGURE 4-3: THREE-YEAR AVERAGE NUMBER OF FATALITIES BY PROVINCE, 1996 – 1998

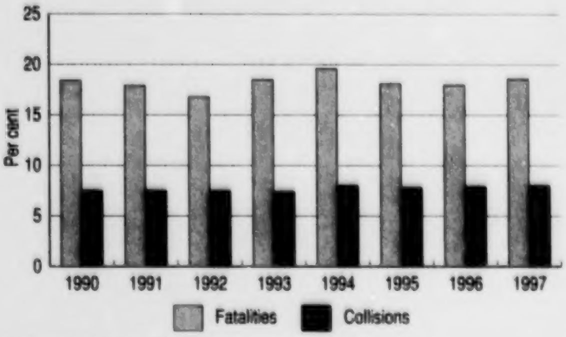
(Per 10,000 motor vehicles registered)



Source: Canadian Motor Vehicle Traffic Collision Statistics

From 1990 to 1997, vehicles involved in collisions with commercial vehicles accounted for approximately eight per cent of all vehicles involved in road collisions, yet accounted for roughly 18.6 per cent of all road fatalities. The number of fatalities resulting from collisions involving commercial vehicles increased slightly in 1997 over the previous year due, in large part, to the single vehicle/bus collision at Les Eboulements, Quebec, in October of that year. Figure 4-4 shows the percentage of road collisions and fatalities involving commercial vehicles from 1990 to 1997.[2]

FIGURE 4-4: PERCENTAGE OF ROAD COLLISIONS[1] AND FATALITIES INVOLVING COMMERCIAL VEHICLES, 1990 – 1997



[1] Collisions: Vehicles involved in collisions

Source: Transport Canada, Traffic Accident Information Database

Table 4-8 gives a breakdown of commercial and other vehicles involved in fatal collisions by type of vehicle from 1993 to 1997.

TABLE 4-8: COMMERCIAL AND OTHER VEHICLES INVOLVED IN FATAL COLLISIONS BY VEHICLE TYPE, 1993 – 1997

Vehicle Type	*1993*	*1994*	*1995*	*1996*	*1997*
Commercial					
Bus	37	43	31	39	32
Trucks greater than 4,536 kg	212	197	163	167	179
Tractor-trailers	343	328	346	294	335
Total Commercial Vehicles	592	568	540	500	546
Other vehicles involved in collisions with commercial vehicles	599	574	533	458	486
Total vehicles involved in collisions with commercial vehicles	1,191	1,142	1,073	958	1,032
All other vehicles involved in collisions	3,933	3,590	3,606	3,438	3,247
Total: all vehicles	5,124	4,732	4,679	4,396	4,279

Source: Transport Canada, Traffic Accident Information Database

In 1997, private automobiles accounted for 53 per cent of vehicles involved in fatal collisions. This share was down slightly from that of 1993, when the automobile accounted for 56 per cent. Light duty trucks and vans had the second largest share of vehicles involved in fatal collisions in 1997, with 25 per cent, followed by the combined categories of Truck (Tractor Trailer, Trucks less than 4,536 kg and other) with 13 per cent.

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[2] Disaggregation by commercial vehicle is currently only available to 1997.

Table 4-9 compares the number of vehicles involved in fatal motor vehicle collisions by type of vehicle from 1993 to 1997.

TABLE 4-9: VEHICLES INVOLVED IN FATAL COLLISIONS BY VEHICLE TYPE, 1993 – 1997

Vehicle Type	*1993*	*1994*	*1995*	*1996*	*1997*
Automobile	2,866	2,605	2,583	2,431	2,277
Pickup truck	1,147	1,083	1,077	1.037	1,059
Truck:					
Tractor-trailer	343	328	346	294	335
Truck greater than 4,536 kg	212	197	163	167	179
Other	23	23	25	15	21
Bus:					
School	12	16	10	12	8
Intercity	1	7	5	7	4
Transit	10	11	6	7	9
Bus unspecified	14	9	10	13	11
Motorcycle[1]	217	164	170	141	126
Bicycle	85	91	70	63	74
Farm equipment	31	32	36	37	32
Snow equipment	56	39	64	50	41
Train/Streetcar	19	20	11	16	11
Motor home	18	32	24	28	19
All-terrain vehicles	10	13	4	8	9
Other	60	62	75	70	64
Total	**5,124**	**4,732**	**4,679**	**4,396**	**4,279**

1 Includes mopeds.

Source: Transport Canada, Traffic Accident Information System

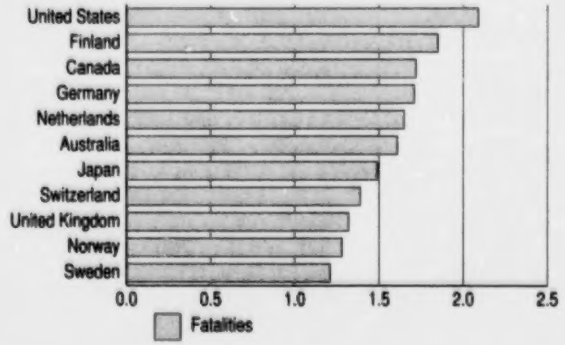
INTERNATIONAL COMPARISONS

As a result of its continuing successes in improving motor vehicle safety, Canada ranks as one of the top Organization for Economic Co-operation and Development (OECD) member countries that are comparable.

Figure 4-5 compares fatality rates per motor vehicles registered for selected OECD member countries from 1996 to 1998.

FIGURE 4-5: AVERAGE MOTOR VEHICLE FATALITY RATES AMONG OECD COUNTRIES, 1996 – 1998

(Per 10,000 motor vehicles registered)



Source: International Road Traffic Accident Database, OECD

Vehicle ownership rates are considered to be an indicator of motor vehicle activity and exposure to risk. Canada's vehicle ownership rate was 58 per 100 inhabitants in 1997, compared with 76 in the United States, which has the highest among OECD countries. Higher ownership rates in Canada and the United States indicate a greater degree of reliance on this mode of transportation and therefore a generally higher exposure to risk for road users.

MARINE

OVERVIEW

There were 525 shipping accidents in 1999, up seven per cent from 1998 but 16 per cent below the 1994 – 1998 five-year average, and approximately half the 1990 total. Over the past decade, there has been an average annual decline in shipping accidents of seven per cent. This decline has been relatively steady, with increases recorded in only three years, 1990, 1994 and 1999. In both 1990 and 1994, the largest increase was in the number of flooding accidents; in 1999, the greatest upturn was in the number of groundings (143), propeller/rudder/structural damage (40) and collision (24) accidents. These increases were largely attributable to fishing vessels.

As in preceding years, the largest proportions of shipping accidents in 1999 by type of accident were in the categories grounding at 27 per cent, followed by striking at 15 per cent, fire/explosion at 13 per cent and flooding at 12 per cent. The number of capsizing accidents (seven) declined notably in 1999, representing roughly half the 1998 total and one third of the five-year average.

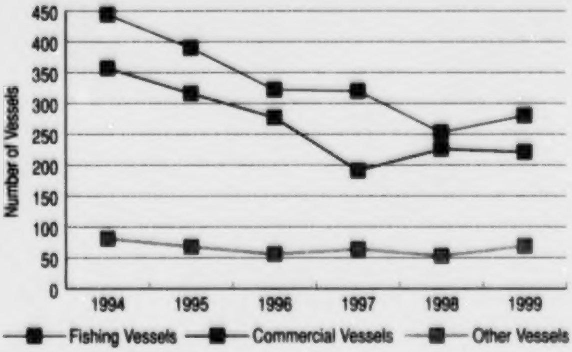
A total of 573 vessels were involved in shipping accidents in 1999. Fishing vessels accounted for 280, or 49 per cent, of these, consistent with historical trends. This total for fishing vessels did, however, represent a 11 per cent increase from 1998. As in previous years, the majority of these vessels were involved in grounding and flooding accidents, at 28 and 20 per cent, respectively.

The proportion of commercial vessels involved in accidents in 1999, 39 per cent, was on a par with the previous five-year average. There were 225 vessels involved, one per cent below the 1998 total and 19 per cent below the five-year average. Of those vessels that pose a greater risk to persons and the environment, ferry (22 vessels in 1999) and passenger (18 vessels) remained comparable with their respective five-year averages, while tanker vessels (14) showed a modest decrease. The one notable increase over 1998 was in the number of accidents involving barge vessels (36), up 33 per cent in 1999 but still on a par with the five-year average. The largest decrease in recent years has been in the number of accidents involving vessels in the bulk carrier/oil, bulk, ore (OBO) category, with 67 reported in 1999, compared with the five-year average of 97. Striking accidents and grounding accidents were the most common type reported for commercial vessels, at 28 and 22 per cent, respectively.

In 1999, there were 69 accidents involving vessels in other categories (i.e. service, non-commercial and other), 23 per cent over the 1998 total and nine per cent above the five-year average. Service vessels accounted for the single largest component, with almost 51 per cent.

Figure 4-6 shows the number of vessels involved in shipping accidents by vessel type from 1994 to 1999.

FIGURE 4-6: VESSELS INVOLVED IN SHIPPING ACCIDENTS BY VESSEL TYPE, 1994 – 1999



Source: Transportation Safety Board

In 1999, there were 84 foreign-flag vessels involved in shipping accidents, down slightly from the 1998 total of 87 but 30 per cent below the five-year average of 120. Bulk carrier/OBO was the most common vessel type at 45 per cent. The majority of shipping accidents involving foreign-flag vessels involved striking, at 33 per cent, and groundings, at 25 per cent. The Laurentian Region reported the greatest number of foreign-flag vessels involved in shipping accidents, with 26, followed by the Western Region, with 23.

In addition to shipping accidents, there were 69 accidents aboard ship in 1999, up 14 per cent from the 1998 total of 59 and 13 per cent from the 1994–1998 average of 60. The majority of these accidents, 43 per cent, occurred on commercial vessels, while 37 per cent occurred on fishing vessels. The Maritimes Region reported the largest increase, up 35 per cent over the five-year average, and represented one quarter of the total, the same share held by the Western Region.

There were 29 marine-related fatalities in 1999, down from 48 in 1998 and below the five-year average of 35. Approximately half (15) of the casualties resulted from accidents aboard ship. Of the 29 fatalities, 14 were on a fishing vessel, eight on a commercial vessel and seven on a non-commercial vessel. Only two marine accidents resulted in multiple casualties. In one, a collision between a pleasure craft and a tug towing a barge on the West Coast resulted in five fatalities; in the other, a charter fishing boat in the Laurentian Region foundered with the loss of three lives.

Forty one vessels were lost in 1999, down 16 per cent from 1998 and 40 per cent from the five-year average. Vessels of less than 150 gross registered tonnage accounted for the largest proportion (93 per cent) of those lost vessels in 1999. Most were small fishing vessels.

The number of shipping incidents in 1999 (171) was consistent with the total for the previous five-year average of 176. The most common, 41 per cent, were related to engine/rudder/propeller problems. The greatest reduction in the longer-term trend has been in the number of close-quarters situations reported. In 1999, this type of incident represented 19 per cent of the total, still well below the five-year average of 29 per cent.

Table 4-10 shows marine occurrences by type from 1994 to 1999.

TABLE 4-10: MARINE OCCURRENCES, 1994 – 1999

	1994	*1995*	*1996*	*1997*	*1998*	*1999*	*1994–1998 Average*
Shipping Accidents	797	695	605	533	489	525	(624)
Accidents Aboard Ship	67	56	58	59	59	69	(60)
Fatalities	40	39	25	24	48	29	(35)
Vessels Lost	88	82	60	60	49	41	(68)
Incidents	228	199	132	155	167	171	(176)
Injuries	81	82	71	83	80	81	(79)

Source: Transportation Safety Board

REGIONAL OVERVIEW

The Transportation Safety Board (TSB) defines six regional boundaries for occurrence reporting purposes. Accidents occurring in foreign waters involving Canadian vessels are also captured as part of the regular statistical occurrence reporting.

The Western Region, which has routinely reported the single largest regional total of shipping accidents (167 in 1999), registered the largest decrease from 1998 levels, with a 14 per cent decline. Shipping accidents in this region have been decreasing since 1994, when the total was 300. The decline has been largely attributed to the number of fishing vessels involved. Vessels lost in this region in 1999 represented 39 per cent of the national total.

Conversely, the trend for the Maritimes Region, which had been declining since 1994, showed a 26 per cent increase in shipping accidents over 1998. The increase was seen mostly in the number of accidents involving fishing vessels, up to 92 in 1999 from 60 in 1998. The greatest percentage of fishing vessel accidents was due to grounding and flooding, at 24 and 23 per cent, respectively. Vessel losses that occurred in this region accounted for approximately 27 per cent of the national total.

The largest year-over-year increase in 1999 occurred in the Newfoundland Region. The number of shipping accidents there rose by 38 per cent from 1998 to 95, a 35 per cent increase from the five-year average. Of the 103 vessels involved, 74 per cent were fishing vessels, up 36 per cent from 1998. The leading categories amongst fishing vessel accidents were fire/explosion at 20 per cent, propeller/rudder/structural damage at 19 per cent and flooding at 18 per cent. The number of vessel losses occurring in this region represented about one quarter of the national total.

In 1999, there were 67 shipping accidents in the Laurentian Region, up four per cent from 1998. Much of the increase was due to a rise in the number of accidents involving tug/barge vessels (15), up from six in 1998 and from 12 for the five-year average. In addition, there were 25 grounding accidents, twice as many as in 1998. Commercial vessels were involved in 76 per cent of these grounding accidents for the Laurentian Region.

The Central Region reported 50 shipping accidents, a 21 per cent decrease from the previous year's total. Fewer accidents involving ferry/passenger vessels (five in 1999, 13 in 1998) were behind this overall decline.

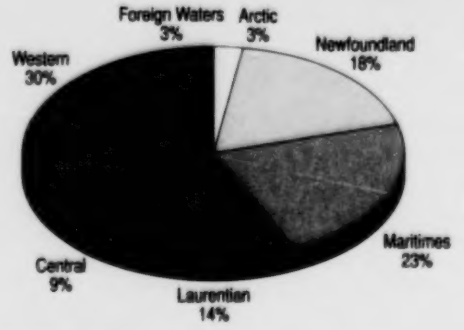
The Arctic Region saw 15 vessels involved in shipping accidents, three times the 1998 total of five and almost double the five-year average of eight. The increase was attributed in large part to accidents involving service type vessels.

Figure 4-7 compares the percentage share of shipping accidents by Transportation Safety Board regions for 1999.

COMMERCIAL SHIPPING ACTIVITY

In terms of the level of shipping activity, the estimated[3] number of vessel trips for Canadian commercial vessels in 1999 has decreased by four per cent from 1998, whereas the number of vessels involved (154), remained equivalent. Foreign-flag vessel trips are estimated to have declined by 11 per cent from 1998, while the number of vessels involved (71) was on par with the 1998 total. When comparing accident rates[4] for Canadian and foreign vessels over the same period, it is important to recognize that included in Canadian commercial vessels are the daily operations of numerous tugs and barges, whereas foreign-flag vessels mainly comprised larger vessels such as tankers, bulk carriers and container vessels. This incongruity contributes to a generally lower accident rate for foreign-flag vessels. Canadian commercial fishing vessel activity was estimated to have increased by 14 per cent in 1999.

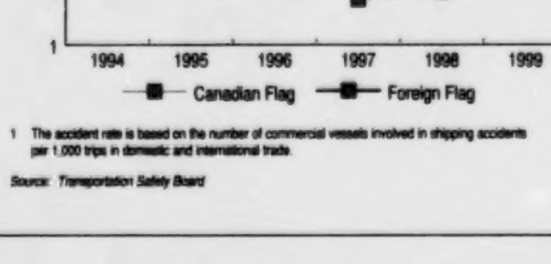
FIGURE 4-7: SHIPPING ACCIDENTS BY TRANSPORTATION SAFETY BOARD REGION, 1999



Source: Transportation Safety Board

Figure 4-8 charts the accident rate of Canadian-flag and foreign-flag commercial vessels from 1994 to 1999.

FIGURE 4-8: COMMERCIAL VESSEL ACCIDENT RATE,[1] 1994 – 1999



1 The accident rate is based on the number of commercial vessels involved in shipping accidents per 1,000 trips in domestic and international trade.

Source: Transportation Safety Board

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[3] Forecast based on data for the first two quarters of 1999.

[4] The accident rate is based on the number of commercial vessels involved in shipping accidents per 1,000 trips in domestic and international trade.

PORT STATE CONTROL

Canada is signatory to two Memoranda of Understanding (MOU) on Port State Control: the Paris MOU, which includes 18 European countries as well as Canada, and the Tokyo MOU, which comprises 18 Asia–Pacific countries and Canada. Members of the Paris MOU are required to obtain an inspection rate of 25 per cent of vessels entering the members' ports. Members of the Tokyo MOU are working toward a regional percentage of individual vessels at 50 per cent of vessels entering the region's member ports.

In 1999, in Canada, 1,078 inspections were carried out under these MOUs on vessels from 57 different flags of registry. Of the vessels inspected, 52 per cent were found to have defects, and of these, 22 per cent were serious enough to require the vessels to be detained. Most detentions issued in Canada were issued under three categories of offences: lifesaving equipment, firefighting equipment and structural defects. The majority of vessels inspected, 44 per cent, were bulk carriers, with 17 per cent of these being detained. The average age of detained vessels was 16.5 years.

In 1999, there were seven Canadian vessels inspected in foreign ports that are signatory to the Paris MOU. They were found to have deficiencies and two were detained. Of the vessels inspected, there were five supply ships, one passenger ship and one special purpose vessel. As for the defects leading to detention, for the passenger ship, its detention was related to its oil record book and oily water separating equipment while the supply ship, certification issues tied to minimum safe manning, oil pollution prevention and cargo ship safety radio were behind its detention.

RECREATIONAL BOATING

In 1997, the most recent year for which data is available, there were 138 drownings[5] from recreational boating in Canada. This is a 12 per cent decline from the previous year's total and a three per cent drop from the 1992 – 1996 five-year average of 143. At 33 per cent, fishing accounted for the largest proportion of drownings from recreational boating; this was consistent with 1996. At 43, drownings as a result of powerboating showed a marked increase over the 1996 total of 30.

Ontario reported the largest percentage of drownings from recreational boating, with 30 per cent, followed by Atlantic and Quebec, both at 20 per cent. There were no recreational boating drownings in the Northwest Territories or the Yukon in 1997, down significantly from the 1996 total of 11.

The number of non-drowning boating fatalities dropped to 16 in 1997 from 20 in 1996. Of these, 11 involved collision/trauma and five were the result of immersion hypothermia. In 1997, nearly half the fatalities for both these incident types occurred in British Columbia.

AVIATION

DOMESTIC OPERATIONS

This section summarizes the aviation occurrences involving Canadian-registered aircraft. It does not include occurrences involving foreign aircraft, nor does it include occurrences involving ultra-light or advanced ultra-light aircraft.

In 1999, there were 340 accidents involving Canadian-registered aircraft, down 12 per cent from the 1998 total of 385, and eight per cent lower than the 1994 – 1998 five-year average of 371. The 1999 total represents the lowest annual number of aviation accidents involving Canadian-registered aircraft in the last 25 years. Table 4-11 shows the number of accidents and fatal accidents by type of aircraft from 1990 to 1999.

TABLE 4-11: ACCIDENTS INVOLVING CANADIAN-REGISTERED AIRCRAFT, 1990 – 1999

Type of aircraft	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
Accidents										
Aeroplanes Involved										
Airliners	3	11	7	14	6	7	5	8	14	7
Commuter Aircraft	12	6	10	9	8	19	12	14	10	12
Air Taxi/Aerial Work	150	145	132	122	116	134	106	120	129	92
Private/State	250	216	235	221	173	155	151	153	164	163
Helicopters Involved	70	64	34	52	61	68	56	56	56	45
Other Aircraft[1]	14	14	17	8	21	12	12	10	16	15
Total	**498**	**453**	**434**	**422**	**380**	**390**	**342**	**356**	**386**	**340**
Fatal Accidents										
Aeroplanes Involved										
Airliners	0	3	0	3	0	1	1	0	0	1
Commuter Aircraft	2	1	1	0	2	2	1	0	1	2
Air Taxi/Aerial Work	13	18	9	16	14	21	12	11	9	6
Private/State	21	34	29	26	14	20	20	18	14	20
Helicopters Involved	8	7	3	3	3	11	7	8	6	4
Other Aircraft[1]	3	2	4	0	0	0	3	8	2	4
Total[2]	**47**	**64**	**47**	**48**	**33**	**52**	**44**	**36**	**31**	**35**

1 Includes gliders, balloons and gyrocopters.

2 The number of aircraft involved may not sum to the number of accidents, as some accidents involve multiple aircraft.

Source: Transportation Safety Board

Over this ten-year period, the number of accidents for most aircraft types declined significantly, most notably in the categories of air taxi/aerial work and private aircraft. The number of accidents involving helicopters also decreased substantially. Private/state aircraft accounted for 48 per cent of the total number of accidents, while air taxi/aerial work aircraft operations accounted for 27 per cent. Although the number of accidents involving private/state aircraft has been steadily decreasing over time, this category has consistently represented nearly half the total accidents involving Canadian-registered aircraft and, in 1999, accounted for roughly 57 per cent of the total of fatal accidents.

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[5] The information is coming from the Canadian Red Cross National Drowning Report.

Airliners include commercial aircraft that have a maximum take-off weight of greater than 8,618 kilograms or aircraft that are authorized to carry more than 20 passengers. In 1999, Canadian-registered airliners were involved in seven accidents, down from 14 in the previous year and from the 1994 – 1998 five-year average of eight. One of these resulted in fatalities. In January, at Mayne Island, British Columbia, a Kelowna Flightcraft aircraft collided with terrain and had two fatalities.

Regional or large commuter aircraft are those having a maximum take-off weight of less than 8,618 kilograms and capable of carrying 10 to 19 passengers/crew. In 1999, there were 12 accidents involving aircraft in this type of operation, up slightly from the previous year (10) but remaining in line with the five-year average of 13. In 1999, there were two fatal accidents involving Canadian-registered commuter aircraft, each reported as collision with terrain and each resulting in a single fatality. The first occurred in March, at Davis Inlet, and involved a de Havilland DHC6 departing Goose Bay with two crew on a VFR flight to Davis Inlet. It was reported that weather conditions presented poor visibility with blowing snow. The second took place in August, at Sept-Îles, and involved a Beech 1900D that was travelling from Port-Meunier to Sept-Îles. The pilot was fatally injured, while the co-pilot suffered serious injuries on impact.

Most commercial air accidents involve aircraft in the air taxi/aerial work categories. These types of operations accounted for 27 per cent of the total number of accidents involving Canadian registered aircraft, a decrease of 29 per cent from 1998 and 24 per cent from the 1994-1998 average. One fatal accident was reported in 1999 involving an aerial application operation.

The accident rate in 1999 was 8.3 accidents per 100,000 hours flown, below the both rate for 1998 and the five-year average.

By region, the number of accidents continued to decrease in 1999 and to follow a downward trend for all regions over the 1990 – 1999 period. In 1999, the Prairie and Northern Region accounted for 37 per cent of all accidents involving Canadian-registered aircraft, followed by Ontario with 31 per cent and Quebec with 13 per cent. With the exception of the Ontario Region, which remained unchanged over 1998 (105 accidents) and the Quebec Region, which increased marginally (by two accidents), all regions reported fewer accidents in 1999. The largest year-over-year decrease occurred in the Pacific Region in 1999 – 1998, which saw the number of accidents fall from 70 to 40, or 43 per cent.

Table 4-12 summarizes air accidents by region over the ten-year period, while Table 4-13 shows the corresponding number of air fatalities by region.

TABLE 4-12: ACCIDENTS INVOLVING CANADIAN-REGISTERED AIRCRAFT BY REGION, 1990 – 1999

Transport Canada Region	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
Accidents										
Atlantic	32	23	24	23	23	22	18	20	20	16
Quebec	97	83	87	76	70	78	39	60	41	45
Ontario	121	100	104	119	84	74	72	84	105	106
Prairie & Northern	135	142	114	108	110	130	122	108	131	124
Pacific	108	93	93	88	81	72	83	72	70	40
Outside Canada	5	12	12	8	12	14	8	12	17	9
Total	**498**	**453**	**434**	**422**	**380**	**390**	**342**	**356**	**384**	**340**

Note: The number of aircraft involved may not sum to the number of accidents as some accidents involve multiple aircraft.

Source: *Transportation Safety Board*

TABLE 4-13: FATALITIES INVOLVING CANADIAN-REGISTERED AIRCRAFT BY REGION, 1990 – 1999

Transport Canada Region	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
Fatalities										
Atlantic	0	5	0	2	2	6	6	2	5	1
Quebec	21	17	8	22	20	9	12	18	27	9
Ontario	21	12	16	23	16	31	12	8	9	14
Prairie and Northam	12	32	17	25	11	26	13	17	20	17
Pacific	25	29	32	25	23	32	20	22	12	26
Outside Canada	12	278	7	5	8	3	8	10	10	0
Total	**91**	**373**	**80**	**102**	**80**	**107**	**71**	**77**	**83**	**67**

Source: *Transportation Safety Board*

In 1999, air fatalities were down 19 per cent from both the previous year and the 1994–1998 average. Although the Pacific Region recorded the fewest number of accidents, it registered the highest number of fatalities, with 26, followed by the Prairie and Northern Region, with 17, and Ontario, with 14. There were 43 serious injuries resulting from accidents, declining slightly from the 1998 total of 48 and the five-year average of 49.

The number of reported incidents involving either a Canadian- or foreign-registered aircraft decreased by ten per cent from 1998 levels and was only 3.5 per cent more than the 1994 – 1998 average. All types of incidents contributed to the overall decline in 1999. Loss of separation (which refers to an instance in which less than the authorized minimum separation or distance between two aircraft was not assured, and includes collisions and risk of collision), declared emergencies, engine failures and smoke/fire incidents were all down considerably.

International Comparisons

Table 4-14 compares the percentage of fatal air accidents involving airliner and commuter aircraft for Canada and the US from 1994 to 1999.

TABLE 4-14: FATAL AIR ACCIDENTS INVOLVING AIRLINER AND COMMUTER AIRCRAFT, CANADA AND US, 1994 – 1999

	1994	*1995*	*1996*	*1997*	*1998*	*1999*	*1994 – 1998 Average*
Canada							
Accidents	14	26	17	22	24	19	21
Fatal Accidents	2	3	2	0	1	3	2
Fatalities (%)	14.3	11.5	11.8	0	4.2	15.8	9.5
US							
Accidents	33	48	49	66	56	64	50
Fatal Accidents	7	5	6	9	1	6	6
Fatalities (%)	21.2	10.4	12.2	13.6	1.8	9.4	12.0

Note : Figures pertain to airliner and commuter aircraft only. Civil Aviation Regulations (CAR's) definition; aircraft with 10 or more seats.

Source: Transportation Safety Board of Canada; US National Transportation Safety Board

Comparing Canadian and US accident data is made difficult by the fact that each country classifies and records its occurrence data differently, and due to fundamental differences in the domestic air network and infrastructure of each country. Canada's air transportation network is largely linear in nature, extending the entire breadth of the country; the US, on the other hand, uses a highly developed hub and spoke network, fanning out in all directions. Both countries, however, are members of international panels and working groups whose goals are to establish a common taxonomy and to standardize aviation safety related information. Work from such collaborative efforts should greatly facilitate comparisons and understanding of international safety records.

Based on the preliminary US aviation accident statistics for 1999, there was an increase in the number of American-registered scheduled airlines flying under Part 121 Air Carriers[6] and Commuters.[7] Both accidents and fatal accidents for US-registered aircraft were up, by eight and five per cent, respectively. At 64, US aviation accident totals for these categories were well above the 1994 – 1998 five-year average of 50, while the total for fatal accidents was consistent with the five-year average of six.

From a safety perspective, using a rate of fatal accidents per number of accidents as a rough means of comparison, Canada had a slightly lower overall rate for the five-year period, although year-to-year variations tend to fluctuate widely. In terms of safety, 1998 was a banner year for the US air industry, while Canada enjoyed its most successful year in 1999.

TRANSPORTATION OF DANGEROUS GOODS

Every year over 27 million dangerous goods shipments are transported across Canada. Most of these shipments include goods that directly influence and improve the lifestyle that Canadians have come to expect and enjoy. The Transport of Dangerous Goods (TDG) program promotes public safety during the transportation of goods that can threaten public safety when involved in an accidental release.

TDG accidents are called "reportable" if they are severe enough to meet the reporting requirement defined in TDG program regulations. Very few TDG accidents are caused by the dangerous goods themselves. In 1999, there were three reportable TDG accidents directly caused by dangerous goods. One fatality resulted from one of the three accidents. A fraction of the 1999 accident data includes estimates.

Table 4-15 compares reportable accidents involving dangerous goods by mode and type of accident.

TABLE 4-15: REPORTABLE ACCIDENTS INVOLVING DANGEROUS GOODS BY MODE OF TRANSPORT, 1990 – 1999

	In transit					
Year	*Road*	*Rail*	*Air*	*Marine*[1]	*Not in transit*	*Total*
1990	183	17	2	0	194	396
1991	155	27	4	2	251	439
1992	140	25	0	1	228	394
1993	103	25	1	0	113	242
1994	114	30	1	0	145	290
1995	109	19	3	0	205	336
1996	239	35	9	1	237	521
1997	166	16	6	1	194	383
1998[2]	179	13	4	0	239	435
1999	201	19	3	0	295	518
Average	*159*	*23*	*3*	*1*	*210*	*395*

1 The TDG program does not cover dangerous goods transported in bulk on ships or by pipeline.
2 Revised figures.

Source: Transport Canada, Dangerous Goods Accident Information System

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[6] Those aircraft carrying in excess of 29 passengers.

[7] Those aircraft carrying 10 to 29 people.

In 1999, there were 518 reportable dangerous goods accidents. In-transit accidents in Table 4-15 includes those that occurred during actual transport, while handling accidents are those that took place at handling facilities. Many handling accidents occur in warehouses while the goods are being handled prior to loading or unloading. Between 1990 and 1999, more dangerous goods accidents occurred at the handling stage than while they were being transported.

The number of deaths related to dangerous goods in transit is low.

Table 4-16 summarizes the number of deaths, as well as the number and severity of injuries caused by dangerous goods at reportable accidents.

TABLE 4-16: DEATHS AND INJURIES CAUSED BY DANGEROUS GOODS AT REPORTABLE ACCIDENTS, 1990 – 1999

	Deaths due to	Injuries due to Dangerous Goods			
Year	Dangerous Goods	Major	Moderate	Minor	Totals
1990	0	8	42	0	50
1991	1	9	9	21	39
1992	0	3	3	34	40
1993	18[1]	1	2	14	17
1994	0	0	3	29	32
1995	0	3	58[2]	2	63
1996	1	2	10	16	28
1997	2	15	14	4	33
1998	2	1	36	12	49
1999	2	11	14	13	38
Average	*2.6*	*5.3*	*19.1*	*14.5*	*38.9*

[1] All 18 deaths are from the same bus-truck collision, Lac Bouchette, Quebec.
[2] 31 employees were exposed to a carbon disulphide release in Ottawa (Ontario).

Source: *Transport Canada, Dangerous Goods Accident Information System*

Table 4-17 gives the total number of deaths and injuries that occurred at reportable transportation of dangerous goods accidents. In many cases, the deaths and injuries are caused by the accident itself (e.g. a collision), not by the goods.

TABLE 4-17: TOTAL DEATHS AND INJURIES AT REPORTABLE DANGEROUS GOODS ACCIDENTS, 1990 – 1999

	Deaths	Injuries			
Year	All causes	Major	Moderate	Minor	Totals
1990	15	21	70	15	106
1991	14	33	27	35	95
1992	8	16	15	47	78
1993	31[1]	9	16	24	49
1994	13	8	20	34	62
1995	7	27	66[2]	13	106
1996	9	16	37	23	76
1997	15	50	73	11	134[3]
1998	13	38	56	15	109
1999	27[4]	79[4]	130[5]	29	238
Average	*15.2*	*29.7*	*51.0*	*24.6*	*105.3*

[1] 20 deaths (2 not due to dangerous goods) resulted from one bus-truck collision, Lac Bouchette, Quebec.
[2] 31 employees were exposed to a carbun disulphide release in Ottawa, Ontario.
[3] 27 passengers injured in one bus-truck collision in Fox Creek, Alberta.
[4] 7 deaths and 45 injuries were due to a multiple highway vehicle collision in Windsor, Ontario.
[5] 98 passengers were injured in a train collision with three hopper railway vehicles in Thamesford, Ontario.

Source: *Transport Canada, Dangerous Goods Accident Information System*

In Tables 4-16 and 4-17, minor injuries refer to those injuries that require first-aid treatment, moderate injuries require emergency hospital treatment, and major injuries require overnight hospitalization.

TRANSPORTATION — ENERGY AND ENVIRONMENT

5

The goal of sustainable transportation is to make sure that environmental, economic and social considerations are an integral part of decisions affecting transportation activity.

The main environmental effects of the transportation sector are air, water and noise pollution, greenhouse gas (GHG) emissions, and the use of land and other natural resources. Transportation activities contributing to these pressures include the construction of infrastructure; the production, operation, maintenance and disposal of vehicles; and the provision of energy and fuel.

The wide scope of transportation activities, the environmental pressures they cause, and the range of private- and public-sector stakeholders involved result in an intricate policy context for the sector's sustainability. The goal of sustainable transportation is to make sure that environmental, economic and social considerations are an integral part of decisions affecting transportation activity. Promoting sustainable transportation is a responsibility shared by governments, industry and individuals. This chapter provides an overview of some key sustainable development initiatives undertaken in 1999.

TRANSPORTATION AND CLIMATE CHANGE

THE TRANSPORTATION CLIMATE CHANGE TABLE

In December 1997, Canada and other developed countries negotiated the Kyoto Protocol to the United Nations Framework Convention on Climate Change. If ratified, the Protocol will commit Canada to reducing its greenhouse gas emissions to six per cent below 1990 levels during the five-year period of 2008 to 2012.

In May 1998, federal, provincial and territorial ministers of transportation established the Transportation Climate Change Table as part of a national process to develop a climate change strategy. Its mandate was to analyse options to achieve progressively greater reductions of greenhouse gas emissions within transportation until reaching or, if possible, surpassing a six per cent reduction from 1990 levels.

In November 1999, the Table completed its Options Paper. Although this paper did not propose a single set of measures for achieving the six per cent reduction, it did present various measures that are sufficient to reach or surpass the Kyoto target. In 1999, the Table consulted with key stakeholders on the process and completed further consultations on the Options Paper in February 2000.

The Table's membership reflects a broad range of interests in transportation. Table 5-1 describes the membership of the Transportation Climate Change Table.

TABLE 5-1:MEMBERSHIP OF THE TRANSPORTATION CLIMATE CHANGE TABLE

- Modes (air, rail, marine, truck, bus, transit)
- Fuels (petroleum, alternative fuels)
- Road Vehicles (domestic, international)
- Non-governmental organizations (Pollution Probe, Pembina, National Round Table on the Environment and the Economy, Transportation Association of Canada)
- Users (drivers (Canadian Automobile Association), shippers (Canadian Pulp and Paper Association))
- Municipalities (Vancouver, Toronto)
- Provinces (British Columbia, Alberta, Manitoba, Ontario, Quebec)
- Federal (Transport Canada, Natural Resources Canada)

Source: Transportation and Climate Change: Options for Action, November 1999

CLIMATE CHANGE ACTION FUND

The Climate Change Action Fund (CCAF) was established by the federal government to help Canada meet the commitments it made in December 1997, in Kyoto, Japan. The CCAF was announced in the 1998 budget, where $150 million was allocated over three years to support the development of an implementation strategy to meet these commitments and to facilitate early action to reduce greenhouse gas emissions. Of the 158 projects that have been announced, 34 projects are transportation-related.

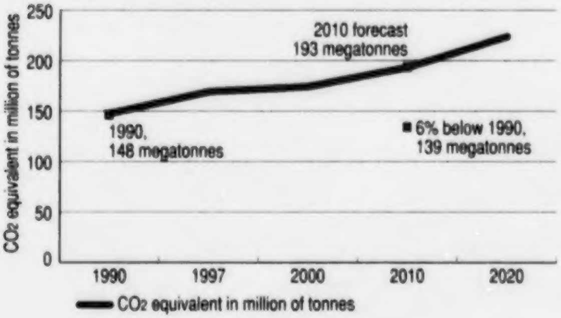
Two project areas are of particular interest to transportation:

- technology early action measures which provide cost-shared support for the development and deployment of emission-reducing technologies: of the 20 projects in that category that have been announced, around one-third are transport-related; and
- public education and outreach activities directed at informing Canadians about climate change and encouraging them to take action: of the 108 such projects that have been announced, around one-quarter are transportation-related.

TRANSPORTATION AND CLIMATE CHANGE

Transportation is the single largest source of greenhouse gasses in Canada, accounting for 25 per cent of the total in 1997. If current trends continue, greenhouse gas emissions from transportation are expected to exceed 1990 levels by 32 per cent by 2010 and 53 per cent by 2020. To achieve the targetted six per cent reduction from 1990 levels, emissions from transportation would have to be reduced by about 54 megatonnes, or 28 per cent, from the forecasted level of 193 megatonnes in 2010. Figure 5-1 shows the implications of the Kyoto Protocol on forecasted greenhouse gas emissions from the transportation sector, from 1990 to 2020.

FIGURE 5-1: KYOTO PROTOCOL IMPLICATIONS FOR TRANSPORT SECTOR GREENHOUSE GAS EMISSION PROJECTIONS, 1990 - 2020



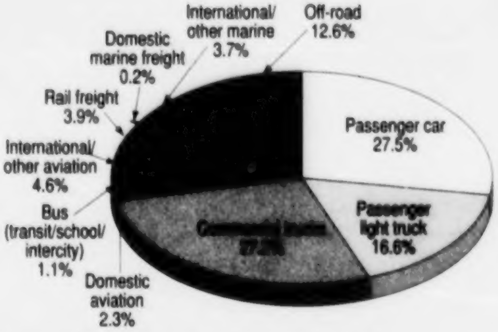
Source: Transportation and Climate Change: Options for Action, November 1999

Road transport accounts for roughly 70 per cent of greenhouse gas emissions from the transportation sector, with 44 per cent of this total coming from cars and light-duty trucks and 27 per cent from commercial vehicles (primarily heavy-duty trucks). The next largest single source is off-road use, which includes industrial equipment (agriculture, forestry, mining and construction), recreational vehicles, boats, and lawn and garden equipment.

The three sources of emissions expected to grow most rapidly between 1990 and 2020 are aviation by Canadian carriers (forecasted to increase by 99 per cent), off-road uses (diesel by 66 per cent and gasoline by 57 per cent) and on-road diesel (74 per cent). The largest source of transportation emissions, on-road gasoline, is expected to increase by 44 per cent between 1990 and 2020.

Figure 5-2 breaks down the sources of greenhouse gas emissions from the transportation sector for 1997.

FIGURE 5-2: SOURCE OF TRANSPORTATION GREENHOUSE GAS EMISSIONS, 1997



Source: Transportation and Climate Change: Options for Action, November 1999

The mitigation targets established in the Kyoto Protocol do not cover emissions from international air and marine activities. Under the protocol, Parties agreed that the International Civil Aviation Organization (ICAO) will address greenhouse gas emissions from international aviation and that the International Marine Organization (IMO) will address international shipping emissions. Transport Canada is a member of both and is participating on an ICAO working group that is identifying the most efficient market-based options to reduce international emissions within civil aviation.

THE TRANSPORTATION CLIMATE CHANGE TABLE'S ANALYSIS

The work of the Table represents a comprehensive but early look at the potential for reducing greenhouse gas emissions from transportation in Canada. This is the first time that an analysis has been undertaken that looks at the costs and benefits of options across the entire transportation system. The Options Paper is not intended, however, to provide a prescription for implementing different measures; this will require more detailed analysis, design and consultation, including analysis by individual jurisdictions.

The Table commissioned 24 research studies and analysed more than 100 different measures designed to reduce emissions from transportation. While the cost per tonne of reducing greenhouse gas emissions is very important, other key social and economic criteria must also be considered in determining the best measures for reducing emissions.[1]

Table 5-2 lists the criteria used to assess measures for reducing greenhouse gas emissions from transportation.

TABLE 5-2: FOR ASSESSING TRANSPORTATION GHG MEASURES

- GHG impact
- Public support
- Complementarity to other measures
- Certainty/risk
- Ancillary impacts (e.g. safety, health, environment)
- Cost-effectiveness
- Economic impacts
- Ease of implementation
- Equity effects
- Other financial factors (e.g. taxes, costs to government)

Source: Transportation and Climate Change: Options for Action, November 1999

The criteria were used as a general guideline to group the measures into one of four categories:

- ***Most Promising Measures*** — those that have positive benefits or cost less than $10 per tonne are easier to implement or do not involve significant resource transfers. They may need additional analysis and design.
- ***Promising Measures*** — those having low to modest cost or those that complement other measures in the package. They may need additional analysis or development.
- ***Less Promising Measures*** — higher cost measures that may have greenhouse gas reduction potential in the medium- to longer-term and/or require significant additional analysis, much greater public acceptance, or considerable technological development.
- ***Unlikely Measures*** — those that Table members believe do not warrant active consideration at this time because they are made redundant by those in the first three categories or because they are high-cost, have limited potential to reduce emissions, or are extremely difficult to implement.

THE OPTIONS FOR TRANSPORTATION

The transportation measures have been grouped into five packages: passenger, road infrastructure, road vehicles and fuels, freight, and off-road. These packages provide a useful framework for grouping measures that work well together, are aimed at a particular end use, or provide a focus for action in the transportation sector.

Passenger

Passenger travel accounts for the bulk of transportation greenhouse gas emissions. It also presents a challenge in changing the travel, commuting and living habits of Canadians. The ***most promising*** measures are largely voluntary and aimed at increasing public awareness and changing travel behaviour, primarily in urban areas. Telecommuting, car sharing, enhanced driver education and changing the tax treatment of employer-provided transit benefits would, together, form an effective strategy for employers to implement voluntary trip-reduction programs in their organizations. The ***promising*** measures combine strong incentives for alternatives, such as public transit and bicycling, while discouraging car use through charges on parking, starting with the three largest urban centres. Further reductions would require more aggressive pricing mechanisms for roads and parking, large costs for the purchase of more efficient planes and ferries, or measures to restrict travel.

Road Infrastructure

Changes in the way Canada builds, maintains and uses roads and highways could also play a role in reducing greenhouse gas emissions from transportation. The ***most promising*** measures focus on enforcing existing speed limits and on using intelligent transportation systems (ITS) and synchronized traffic signals to improve traffic flow. The ***promising*** measures add two additional intelligent transportation systems, more frequent resurfacing of the national highway system and high-occupancy vehicle lanes to help travellers avoid congested areas. There is concern, however, that intelligent transportation systems could, by improving traffic congestion, induce more traffic and thereby increase emissions. Further and more difficult reductions involve road-pricing systems, changing pavements from asphalt to concrete, and reducing speed limits to 90 kilometres per hour.

Road Vehicles and Fuels

Adopting vehicles and fuels that are less carbon-intensive is critical to reducing greenhouse gas emissions from transportation. However, measures to improve vehicle

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[1] The Table's Options Report and the 24 research studies can be downloaded from Transport Canada's Web site at www.tc.gc.ca/envaffairs/english/climatechange/ttable/.

THE NEW NATURAL GAS VEHICLE PROGRAM

Natural Resources Canada announced a new natural gas for vehicles program funded from the $7 million Market Development Incentive Payments fund. The program will run from February 1, 1999, through January 31, 2002, and will provide support for factory-built natural gas vehicles purchased, conversion of vehicles to natural gas operation, vehicle refuelling appliances and facilities, marketing and awareness activities approved in the Canadian Natural Gas Vehicle Alliance business plan, and co-funded research and development that is essential to fill gaps in natural gas vehicle technology. The various program elements will benefit the environment by reducing emissions, including greenhouse gases and urban smog.

technologies and increase the use of alternative fuels are complex and can raise significant economic issues. As a result, the Table did not propose any ***most promising*** measures for this category. The largest reductions in the ***promising*** measures would come from setting a harmonized target with the US to achieve a 25 per cent reduction in greenhouse gas emissions from new cars and light trucks by 2010. Also, the Table did assess several measures that would expand the use of alternative fuels, particularly in niche markets. These included expanding production of ethanol for blending in gasoline at ten per cent; expanding the infrastructure for propane and natural gas; mandating the use of alternative fuels in government fleets; and promoting the use of alternative fuels in buses and heavy-duty trucks. Further and more difficult measures include purchase incentives for fuel-efficient cars and "feebates." A feebate policy levies surtaxes on higher fuel consuming vehicles and provides a rebate for lower fuel consuming vehicles.

Freight

The ***most promising*** freight measures represent cost-effective voluntary efforts, such as codes of practice and improved training and operating practices for truck drivers. A range of ***promising*** measures for trucking includes load matching to reduce empty or partial trips; the use of new technologies such as improved lubricants; scrappage programs to remove older, inefficient trucks from the road; reducing speed limits to 90 kilometres per hour; and allowing longer trucks in three provinces where they are not currently permitted. Also, two measures encourage the use of more efficient rail cars and engines by increasing the capital cost allowance on rail. Further and more difficult options include the use of alternative fuels and fuel cells for railways, and additional, higher cost truck technology measures.

Off-Road

The Table was not able to identify any ***most promising*** measures for the off-road category, as very little is known about this extremely diverse mix of equipment, which includes forestry, mining, agricultural, construction, lawn and garden equipment, fishing boats, and recreational vehicles such as snowmobiles. The Table did identify as ***promising*** three possible measures that could achieve reductions from recreational vehicles and some construction, mining and agricultural equipment.

FUEL TAXES

A number of the measures studied by the Table include the use of market mechanisms such as prices and fees, including parking charges, road pricing and fuel taxes. Prices play a role in determining the overall demand for transportation, the development and take-up of new more efficient technologies, and the choice of transportation services. Charges and fees could be used to better reflect the full cost of different transportation services, thereby ensuring their most efficient use. The Table analysed several models of fuel taxes, but did not reach a consensus on using fuel taxes as a measure to reduce greenhouse gas emissions. The use of moderate fuel taxes as a means of funding improvements in transportation, particularly in urban areas as a source of funding for transit, generated the most, but not unanimous, support. Under the assumption of medium fuel price elasticity, an urban gasoline tax increase of four cents a litre is estimated to generate $600 million in tax revenues and 1.4 megatonnes of greenhouse gas savings in 2010 and 2.6 megatonnes by 2020.

TAXES AND CHARGES IN MONTREAL AND VANCOUVER

Montreal's Metropolitan Transportation Agency (AMT) collects revenues from different sources to support public transit. These include a 1.5 cent per litre additional fuel tax in the Greater Montreal area. The AMT can also collect an annual tax assessed on non-residential off-street parking, althought it does not currently do so.

The Greater Vancouver Transportation Authority (GVTA), Translink, will receive four cents per litre of fuel tax to contribute to the financing of its operations. Also, the GVTA will have the authority to introduce new sources of revenue including from vehicle charges (after 2001), tolls on projects sponsored by the GVTA and increased transit fees.

OPTIONS REPORT CONCLUSIONS AND RECOMMENDATIONS

The Options Report is intended to identify the costs and benefits of different options, highlight areas of potential, and identify issues and concerns to be addressed. As such, it represents an initial but important step.

There is no single approach that will meet the Kyoto target. Technology has great potential, but technology alone will not allow Canada to meet the Kyoto time frames. A balanced greenhouse gas strategy for transportation will have to address the various parts of Canada's transportation system, including vehicles, fuels, infrastructure and carriers, and will also have to consider consumer behaviour.

The Table has identified a range of ***most promising*** measures that are cost-effective or easier, or that would likely meet with public support. These could generate 10.8 megatonnes of reductions in 2010, at a net benefit of $32 per tonne. This represents about 20 per cent of the Kyoto target in transportation. The cost to governments would be $3.5 billion over 20 years. Table 5-3 lists the most promising measures and the projected greenhouse gas reductions in 2010 and 2020.

TABLE 5-3: MOST PROMISING MEASURES

Measures Package	*GHG reductions in 2010 (In megatonnes)*	*GHG reductions in 2020 (In megatonnes)*
Passenger	3.7	4.3
Road Infrastructure	5.0	5.8
Road Vehicles and Fuels	0	0
Freight	2.0	2.3
Off-road	0	0
Total Most Promising	**10.8**	**12.4**

Source: Transportation and Climate Change: Options for Action, November 1999

A second category, ***promising*** measures, has the potential to reduce emissions by a further 32 megatonnes in 2010, at a net cost of $5 per tonne. These measures move beyond the strictly voluntary, relying on financial incentives, infrastructure improvements and targets to encourage new technologies, improve energy and transportation efficiency, and change practices and behaviour. They may, however, require significant government or private-sector investment. They may also involve additional analysis, design, consultation or international discussions before implementation. Table 5-4 lists further promising measures and the projected greenhouse gas reductions in 2010 and 2020.

TABLE 5-4: PROMISING MEASURES

Measures Package	*GHG reductions in 2010 (In megatonnes)*	*GHG reductions in 2020 (In megatonnes)*
Passenger	10.1	11.4
Road Infrastructure	1.5	2.1
Road Vehicles and Fuels	8.9	26.3
Freight	7.0	8.1
Off-road	4.3	N/A
Total Promising	**31.8**	**47.9**

Source: Transportation and Climate Change: Options for Action, November 1999

Together ***most promising*** and ***promising*** measures would lead to an estimated reduction of 42.6 megatonnes of GHG emissions in 2010, 11-14 megatonnes short of the Kyoto target.

To reduce emissions in transportation further, the Table has identified less promising measures that are more difficult and expensive, and that generally involve restricting activity or introducing pricing mechanisms, such as road and parking pricing.

The Table identified areas for further work, including:

1. **Data Issues** — Data on transportation is limited in a number of areas.
2. **Analytical Issues** — Additional analytical work is under way on the regional impacts of the proposed transportation measures and on intercity rail and bus transportation. Further analytical work was also recommended to quantify competitiveness impacts and to examine design issues for specific measures.

As the national process continues, the Table's analysis will be integrated with those of 15 other issue tables, and the most effective options for the Canadian economy will be assessed. Energy and environment ministers will consider a national climate change strategy in 2000. This will be followed by public consultations on the national climate change strategy and a report to First Ministers in 2001.

TRANSPORT CANADA'S SUSTAINABLE DEVELOPMENT STRATEGY — AN UPDATE

Transport Canada, like all federal government departments, is required to table its second Sustainable Development Strategy (SDS) in Parliament by December 2000. Transport Canada's first such strategy, tabled in 1997, was designed to help foster a sustainable transportation system — one that is safe, efficient and environmentally sound for Canada's present and future generations. To this end, Transport Canada identified eight major challenges and 47 areas for action. Table 5-5 lists the eight challenges.

TABLE 5-5: TRANSPORT CANADA'S EIGHT STRATEGIC ENVIRONMENTAL CHALLENGES

1. Minimize the risk of environmental damage from transportation accidents
2. Promote greening of operations in the transportation sector
3. Reduce air emissions from transportation sources
4. Promote education and awareness of sustainable transportation
5. Assess Transport Canada's direct budgetary transfers for their environmental impact
6. Refine sustainable transportation performance indicators
7. Understand the environmental costs of transportation
8. Develop and promote the application of cleaner transportation systems and technologies.

Source: Transport Canada, Sustainable Development Strategy

In the fall of 1999, Transport Canada developed a Sustainable Development Action Plan, to turn the department's commitments into action.[2] There are three areas of notable accomplishments.

- **Moving on Sustainable Transportation (MOST) Program** — The Minister of Transport launched this program in September 1999.[3] It provides $1 million over three years to encourage projects from environmental, industry, academic and other groups that:
  - stimulate the development of innovative tools, approaches and practices in increasing the sustainability of Canada's transportation system;
  - realize quantifiable results on Transport Canada's sustainable development priorities; and
  - provide Canadians with practical information and tools in better applying sustainable transportation thinking to their daily lives.
- **Environmental Management System (EMS)** — In 1999, Transport Canada's Environmental Management System was expanded to include a broader scope of departmental activities and operations. The first annual report on Transport Canada's Environmental Management System[4] was published in March 1999. It details achievements in greening the department's internal operations. Highlights in EMS implementation for 1999 include:
  - The replacement of 20 fleet vehicles with alternative-fuel vehicles.
  - The upgrade of ozone depleting substances inventory to an online database.
  - A commuting survey of Transport Canada headquarters' employees, which indicates almost 70 per cent of employees are walking, biking or taking the bus to work.
  - A partnership with the Canadian Standards Association has resulted in the publication of the CSA document *Guide to the implementation of ISO 14001 at Airports* in October 1999. This guide is to help airport operators in Canada achieve conformance with the international standard.

  Transport Canada is committed to identify and manage contamination at all of its properties by 2003. Transport Canada has identified 610 contaminated sites of which 533 are confirmed contaminated and 77 are suspected. Most of these sites are small spill areas that pose no threat to the environment or health. Transport Canada has made significant progress in this endeavour and will continue to invest resources in the identification, evaluation, clean up and reporting of its contaminated sites. In the three fiscal years ending in 1999, Transport Canada spent a total of $22 million on assessments and $12 million on remediation.
- **Sustainable Development Performance Indicators** — Transport Canada undertook an extensive internal exercise to develop a draft set of performance indicators for its eight sustainable development challenges. The resulting draft set of internal performance indicators will give Transport Canada a better way to measure progress toward implementing its commitments, as well as assisting in the development of concrete action plans for its 2000 Sustainable Development Strategy.

CLEANER AIR

Most air pollution is caused by the fossil fuels burned in vehicles, homes, thermal power plants and factories. Many chemicals have been identified in urban air pollution. A small number of these have been found to contribute to a range of air quality problems in Canada. These pollutants include nitrogen oxides (NO_x), carbon monoxide (CO), sulphur dioxide (SO_2), particulate matter (PM) and volatile organic compounds (VOC). In 1995, it was established that 57 per cent of NO_x emissions, 67 per cent of CO, five per cent of SO_2, 20 per cent of PM and 28 per cent of VOCs in Canada were attributable to transportation. When some of them combine, they produce smog or acid rain.

SMOG

Transport Canada has participated in the development of Canada-wide standards to deal with priority pollutants that contribute to smog. In the fall of 1999, the Canadian Council of Ministers of the Environment (CCME) accepted, in principle, the recommended Canada-wide Standards for Particulate Matter and Ozone. These standards set numerical air quality targets to protect the environment, to reduce the risk to human health, and to demonstrate the commitment and importance of federal, provincial and territorial co-operation to take action.

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[2] Transport Canada's Sustainable Development Action Plan can be downloaded from its Web site at: www.tc.gc.ca/envaffairs/english/sustainability/sds_e.html#03 TC SDS Action Plan

[3] Transport Canada's MOST program is described on its Web site at: www.tc.gc.ca/envaffairs/MOST.

[4] Transport Canada's 1998 EMS Annual Report can be downloaded from its Web site at: www.tc.gc.ca/envaffairs/english/ems/ems-english/english.html.

ONTARIO'S DRIVE CLEAN PROGRAM

Emissions testing and repair under the Drive Clean program started in January 1999 in the Greater Toronto Area and in Hamilton-Wentworth and on April 1, 1999, became a mandatory requirement for vehicle registration and ownership transfer. In its first year of operation, Drive Clean achieved an estimated 6.7 per cent reduction in smog-causing pollutants. Owners of repaired vehicles under Drive Clean achieved total estimated fuel savings equal to more than 120,000 fill-ups for a mid-size car. This equates to a reduction in carbon dioxide of 18,500 tonnes. When fully implemented by 2004, the program will require emissions tests for 5.2 million light-duty vehicles and 200,000 heavy duty trucks across most of southern Ontario.

SULPHUR IN GASOLINE

In 1999, Environment Canada announced that new regulations under the *Canadian Environmental Protection Act* were approved, phasing in a limit of 30 parts-per-million of sulphur content in gasoline by January 1, 2005, a reduction of more than 90 per cent. It is estimated that over 20 years, low sulphur gasoline will prevent over 2,100 premature deaths, 93,000 incidences of bronchitis in children, five million other health related incidents such as asthma attacks, and 11 million acute respiratory symptoms such as coughs, pneumonia and croup.

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE (UN-ECE) CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION

The United Nations Economic Commission for Europe has developed its eighth protocol under the Convention on Long-Range Transboundary Air Pollution (LRTAP). This new and innovative multi-effect, multi-pollutant protocol amounts to an international agreement to reduce smog. In developing Canada's position for the protocol negotiations, Transport Canada assisted in determining the submission for mobile source emissions. Canada and the United States expect significant health and environmental benefits from the implementation of programs to reduce SO_2, NOx and VOC emissions as well as from the ozone annex being negotiated under the Canada–US Air Quality Agreement.

INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) AND NITROGEN OXIDES

In February 1999, the International Civil Aviation Organization approved changes to its regulations that will reduce nitrogen oxide emission levels by 16 per cent for engines produced after December 31, 2003. All changes to ICAO regulations are implemented in Canada through the Canadian Aviation Regulations administered by Transport Canada.

The industry predicts annual improvements in fuel efficiency of one per cent a year, due to improved technology and operating procedures. However, growth estimates for the industry range from one per cent to two per cent a year. Reductions in emissions per kilometre from existing aircraft will likely therefore be offset by increases in distances travelled. The net effect over time could be a steady emission rate or increased emissions from aircraft. The challenge is to continue working with the ICAO to further reduce nitrogen oxide emissions from the aviation sector and to add requirements to control particulate matter emissions.

Emission reductions are also possible from ground support activities in this sector. Transport Canada participates on the ICAO Committee on Aviation Environmental Protection working group, which is focusing on the reduction of emissions at airports and from aircraft. This working group will also promote operational opportunities for this sector through international standards and guidelines.

VEHICLE EMISSIONS INSPECTION CLINICS

In the summer of 1999, Transport Canada once again partnered with Environment Canada to conduct Vehicle Emissions Inspection Clinics across Canada. The primary objective of the clinics is to raise awareness of on-road vehicles' contribution to smog-causing emissions.

LOW-SPEED VEHICLES

Low-speed Vehicles (LSVs) are four-wheeled electric vehicles which have a minimum attainable speed of 32 kilometres per hour and a maximum of 40 kilometres per hour. Due to the smaller size and the reduced mass of LSVs, there is a potential for significant reduction in energy consumption when an LSV is used in lieu of the passenger car. In addition, the Canadian definition for LSVs will require that they be electrically driven, effectively providing a zero emission vehicle with

VANCOUVER'S REGIONAL TRANSPORTATION NETWORK — TRANSLINK

Translink was officially launched in April 1999. Translink is committed to integrated, locally controlled, and environmentally sensitive transportation. Translink streamlines functions previously administered by provincial, regional and municipal governments. It is expected to smooth out the provision and delivery of transportation services by integrating transportation development and financial decision-making. It will continue to work on the following goals, which were initiated prior to its official start date:

- increase the number of buses
- work toward the completion of the Rapid Transit System linking Coquitlam, New Westminster and Vancouver
- double the capacity of the transit system in the next 10 years
- provide opportunities for more diverse transit service through subsidiaries and new methods of service delivery
- implement the new Air Care II standards
- develop the first strategic transportation plan to support the Greater Vancouver Regional District's Livable Region Strategic Plan.

More information is available on the Translink Web Site at *www.translink.bc.ca*.

significantly reduced noise levels in comparison to a passenger car. Canada Gazette Part II is being finalized which will amend the *Motor Vehicle Safety Regulations* to introduce LSVs as a new class of vehicle in Canada.

RAILWAY SAFETY ACT — ENVIRONMENTAL PROTECTION AND EMISSIONS CONTROL

With the amendment of the *Railway Safety Act* which came into force on June 1, 1999, Transport Canada now has the authority to regulate the release of pollutants into the environment from the operation of railway equipment, with the intent to contribute to the environmental sustainability of the rail transportation industry.

Transport Canada's Railway Safety Directorate is in the process of developing a strategy to respond to the amendment of the *Railway Safety Act* and determining the nature and the extent of a possible environmental rail safety program. The Railway Safety Directorate is also considering alternate methods to the establishment of emissions regulations.

LEGISLATION AIMED AT IMPROVING ENVIRONMENTAL QUALITY

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)

On September 14, 1999, the Parliament of Canada granted Royal Assent to the new *Canadian Environmental Protection Act, 1999* (CEPA 1999). The legislation is expected to come into force in the spring of 2000.

The new Act provides the government with stronger powers to protect the environment and human health. Minister of the Environment David Anderson announced $72 million in new funding for implementation of the Act. There will be more regulations in areas such as engine emissions, as well as changes to the way in which things are regulated. While the 1988 Act focused on managing pollution, the guiding principles of the 1999 Act are pollution prevention, an integrated ecosystem approach, the precautionary principle, and the need to foster intergovernmental co-operation.

The 1999 Act expands the authority to control the components and the handling of fuels and provides for a national fuels mark (similar to an ecologo) to be used at gas station pumps. The legislative authority to set engine emission standards for new motor vehicles will be transferred from Transport Canada's *Motor Vehicle Safety Act* to the *Canadian Environmental Protection Act, 1999*, once the new legislation is in force. This legislative authority will also be expanded to cover other types of engines (e.g. off-road vehicles, generators, lawn mowers, etc.).

CANADIAN ENVIRONMENTAL ASSESSMENT ACT (CEAA)

The *Canadian Environmental Assessment Act* (CEAA) requires that an environmental assessment be conducted before designated federal departments/entities issue certain approvals for proposed projects as defined in CEAA and its Regulations.

Transport Canada participated in the development of the CEAA "Canada Port Authority (CPA) Environmental Assessment Regulations" which came into force on July 28, 1999. The Regulations fulfill a commitment made in passing CEAA and the *Canada Marine Act*. CPAs are now responsible for conducting environmental assessments and for meeting the requirements of the Regulation. As part of its responsibilities under the *Canada Transportation Act* and the *Canada Marine Act*, Transport Canada will monitor and report on the implementation of the Canada Port Authority Environmental Assessment process.

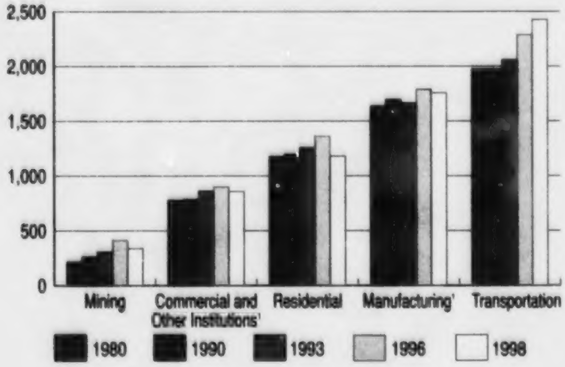
Transport Canada worked closely with the Canadian Environmental Assessment Agency to introduce changes to the "Comprehensive Study List Regulations" related to marine terminals. The Regulations now require a proposed marine terminal designed to handle 25,000 deadweight tonnes to undergo a comprehensive environmental assessment when the terminal is not located on lands routinely or historically used, or designated following public consultation, for that purpose.

The CEAA "Inclusion List Regulations" have also been amended to require an environmental assessment of proposed remediation of contaminated land in Canada.

ENERGY DEMAND

Transportation is the single largest energy user in Canada. In 1998, transportation accounted for about one third of energy used, or 2,426 petajoules of a total of 6,974. Transportation was followed by manufacturing (1,757 petajoules), residential (1,181), commercial and institutions (858), mining (337), agriculture (225), public administration (130), construction (48) and forestry (12). Figure 5-3 shows total energy use for the five highest energy-consuming sectors in the Canadian economy for selected years from 1980 to 1998.

FIGURE 5-3: TOTAL ENERGY USE IN THE CANADIAN ECONOMY BY SECTOR – FIVE HIGHEST ENERGY CONSUMERS, 1980 – 1998

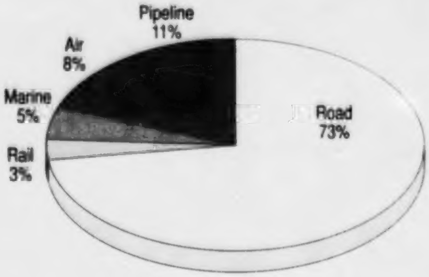


1 Net of transportation activities.

Source: Transport Canada based on data from Statistics Canada's Quarterly Report on Energy Supply-Demand in Canada, Cat. 57-003

Figure 5-4 shows energy use in the transportation sector by mode in 1998. Road is the biggest consumer of energy at 73 per cent, followed by pipelines, air, marine and rail. Energy use and greenhouse gas emissions are directly related: road transport, for example, accounts for roughly the same proportion of total greenhouse gas emissions from transportation as energy consumed.

FIGURE 5-4: TRANSPORTATION ENERGY USE BY MODE, 1998



Source: Transport Canada based on data from Statistics Canada's Quarterly Report on Energy Supply-Demand in Canada, Cat. 57-003

Table 5-6 shows energy use in the transportation sector by fuel for selected years from 1980 to 1998. For traditional fuels, the per cent of diesel and jet fuel used has increased, reflecting higher growth in air travel and transportation industries using diesel (i.e. railways, trucks, buses and pipelines) than in the rest of the transportation sector. The percentage use of gasoline, primarily by private transportation, and light and heavy fuel oil by marine, have decreased, reflecting slower growth rates in these sectors, but also fuel efficiency improvement in private transportation vehicles. The percentage use of alternative fuels, most notably natural gas, has increased.

TABLE 5-6: TRANSPORTATION ENERGY USE BY FUEL, 1980 – 1998

(Per cent)

Fuel	*1980*	*1990*	*1993*	*1996*	*1998*
Gasoline	63.7	56.5	55.4	51.8	51.4
Diesel	18.9	23.7	22.7	24.5	25.2
Jet Fuel	7.7	7.9	6.9	8.3	8.3
Light and Heavy Fuel Oil	5.2	3.0	2.7	2.4	3.0
Natural Gas	4.0	6.9	10.0	10.9	10.2
Liquefied Natural Gas	0.1	1.3	1.6	1.5	1.1
Primary Electricity	0.4	0.6	0.6	0.6	0.8
Total	100.0	100.0	100.0	100.0	100.0

Source: Transport Canada based on data from Statistics Canada's Quarterly Report on Energy Supply-Demand in Canada, Cat. 57-003

LOOKING AHEAD

Governments across Canada, industry and stakeholders will continue to take action to address transport-related environmental challenges. Their objective is to promote sustainable transportation by ensuring that environmental, economic and social considerations are factored into decisions affecting transportation activity. Partnerships and clear and open lines of communications will be essential in achieving this objective.

TRANSPORTATION AND REGIONAL ECONOMIES

6

In 1998, the growth in the importance of transportation at the provincial/territorial level was driven primarily by Ontario, where economic growth was served largely by trucking services. In terms of total transportation, the top four provinces rank the same as their provincial economies.

Each mode of transport — road, marine, rail, and air — makes its own contribution to the economy of each province and territory. This chapter examines the role played by regional transportation as an essential contributor to the nation's economy.

The importance of transportation in the regional context can be assessed in several ways. Two of these are

- transportation's importance within the provincial economies
- provincial transportation's importance within the national transportation and economy.

The first perspective was used in the two previous annual reports. This year's report presents the relative importance of provincial transportation within the national context. This approach provides the relative economic weight of the provinces, an important perspective in Canada given the large disparity in size of its provinces and territories.[1]

Transportation industries cover all commercial transportation activities, i.e. transport of freight or passengers for a fee. Three indicators measure the relative importance of regional transportation:

- value-added[2] of provincial transportation industries
- employment in provincial transportation industries
- expenditures on transport-related goods and services.

The value-added and employment indicators measure the supply or production of transportation. The indicator for transport-related expenditures measures the demand for transportation in a broader context; that is, it includes expenditures by households and investment by government and industry,[3] as well as other government transportation-related expenditures.[4]

THE SUPPLY OF TRANSPORTATION

STRUCTURE OF PROVINCIAL ECONOMIES

The importance of provincial transportation within the national economy is related to the size and structure of the provincial economies. Also important are the provinces' primary commodities production and their specific geography. Figure 6-1 portrays the size and structure of each provincial economy relative to the national economy. Four provinces account for most of the economic activity in Canada, with Ontario accounting for 41 per cent of

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[1] In this chapter, "territories" refers to the total of the Yukon, Northwest and Nunavut territories.

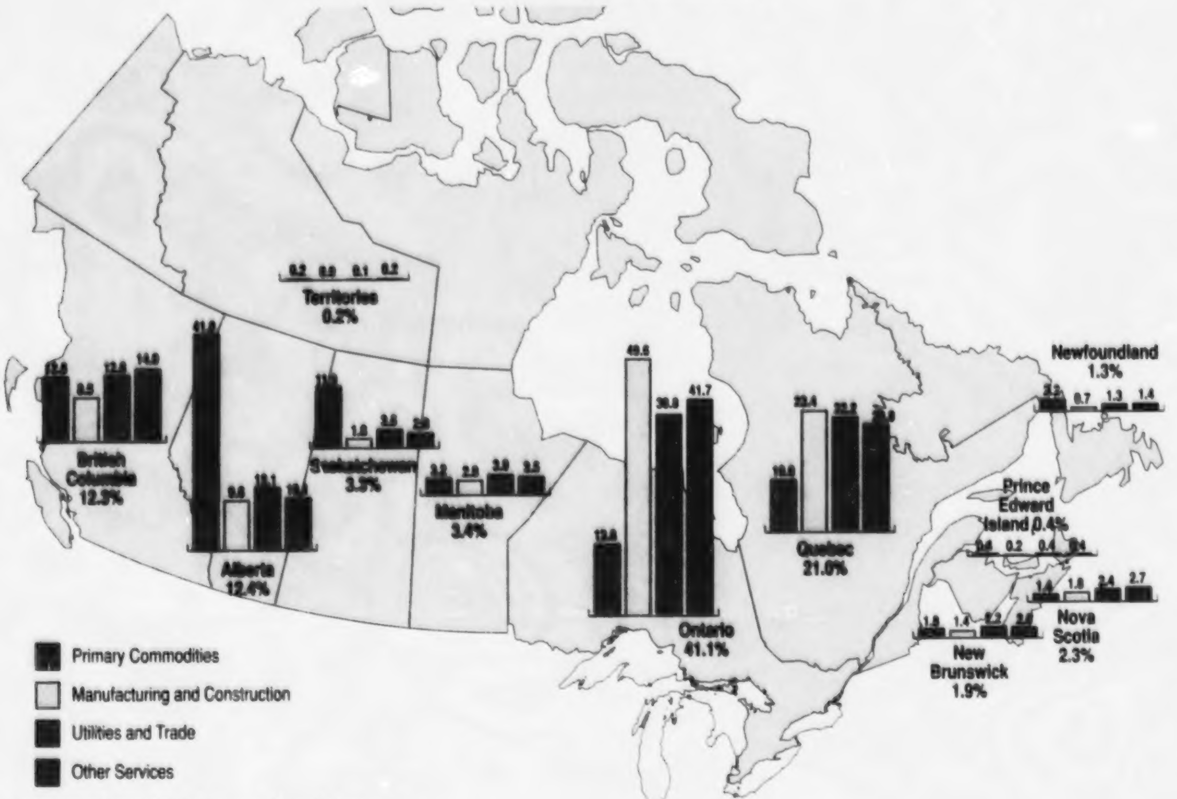
[2] Value-added refers to the payments such as wages and profits made to labour and capital, which are the principal factors used in production throughout the provincial economy. Because value-added is determined by payments to labour and capital, transport's importance to provincial economies is determined by the location of the workers and capital employed by commercial carriers.

[3] Whether made by business or government, "transport investment" can be defined as both new infrastructure construction and purchases of new machinery and equipment. Investment excludes repair and maintenance expenditure, which are expenditures on existing infrastructure, machinery and equipment.

[4] Government expenditures refer to government spending on transport, other than investment, the largest component of which is road maintenance. It forms the final component of the traditional economic accounting relative to final domestic demand, where final domestic demand = consumption + investment + government spending.

FIGURE 6-1: PROVINCIAL ECONOMIES AS A PERCENTAGE OF THE CANADIAN ECONOMY, 1998

(Based on value-added in millions of 1992 dollars)


0.2 0.0 0.1 0.2
Territories
0.2%
12.8 8.5 12.8 14.0
British Columbia
12.3%
9.6 13.1
Alberta
12.4%
1.6 3.5 2.9
Saskatchewan
3.5%
3.2 2.9 3.9 3.5
Manitoba
3.4%
49.6 41.7
Ontario
41.1%
23.4
Quebec
21.0%
Newfoundland
1.3%
0.7 1.3 1.4
Prince Edward Island 0.4%
0.4 0.2 0.4 0.4
1.4 1.8 2.4 2.7
Nova Scotia
2.3%
1.8 1.4 2.2 2.6
New Brunswick
1.9%
Primary Commodities
Manufacturing and Construction
Utilities and Trade
Other Services

Source: Statistics Canada, Industry Measures and Analysis Division

national gross domestic product (GDP), followed by Quebec at 21 per cent, and British Columbia and Alberta with 12 per cent each. No other province accounts for more than four per cent of Canada's GDP.

In terms of structure, Ontario's economy is dominated by the manufacturing and construction sector (50 per cent) and a disproportionately low share, along with Quebec, of primary commodity production. At 42 per cent, Alberta is the greatest contributor to the primary commodities sector.

In terms of economic growth, Ontario, followed by Quebec, was the prime driver of national growth, largely because both provinces showed strong growth in exporting manufactured goods to the United States. Growth in Alberta was lower, because commodity prices were lower, whereas in British Columbia growth was relatively stagnant following the Asian crisis. Newfoundland posted the highest growth of the small provinces, after the Hibernia project came on line in 1998. Saskatchewan posted the lowest growth, as a result of the Asian crisis and low commodity prices. Table 6-1 compares the annual growth of the provincial economies in 1997/98.

TABLE 6-1: ANNUAL GROWTH IN PROVINCIAL ECONOMIES, REAL GROSS DOMESTIC PRODUCT, 1998

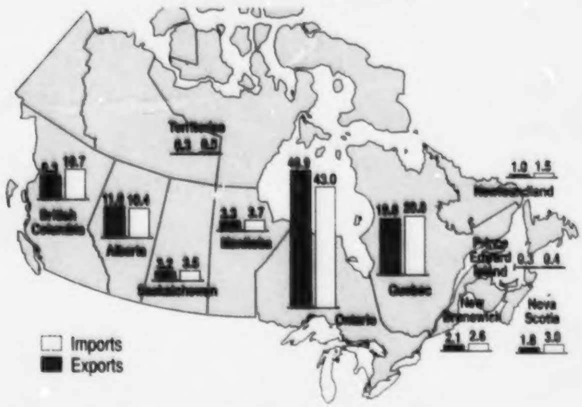
(Based on millions of 1992 dollars)

Province/ Territory	*Primary Commodities*	*Manufacturing and Construction*	*Utilities and Trade*	*Other Services*	*Total*
		(Per cent)			
Canada	0.7	2.9	3.7	2.7	2.9
Newfoundland	58.0	9.2	2.6	1.1	6.7
Prince Edward Island	(2.6)	2.0	4.7	1.3	1.9
Nova Scotia	(1.9)	4.7	4.0	1.4	2.4
New Brunswick	(3.2)	0.9	6.1	2.6	2.9
Quebec	3.7	4.8	3.2	1.4	2.8
Ontario	2.0	4.1	5.6	3.4	4.0
Manitoba	7.8	7.1	2.1	2.7	3.6
Saskatchewan	(1.8)	(5.9)	1.4	4.0	0.7
Alberta	(1.7)	(1.0)	3.7	5.1	2.2
British Columbia	1.3	(3.9)	0.2	1.5	0.3
Territories	(9.3)	(13.8)	(3.3)	4.9	0.3

Source: Statistics Canada, Industry Measures and Analysis Division

FIGURE 6-2: PROVINCIAL EXPORTS AND IMPORTS AS A PERCENTAGE OF THE NATIONAL TOTALS, 1998

(Based on millions of 1992 dollars)



Source: Statistics Canada, Cat. 13-213-ppb, Provincial Economic Accounts, 1998

In terms of national trade, Ontario predominates, particularly for exports. As Figure 6-2 shows, only Ontario and Alberta among the large provinces enjoyed trade surpluses in 1998, while only Newfoundland among the smaller provinces enjoyed a trade surplus. British Columbia faced a large trade deficit, which reflected the weak demand for primary commodities in Asian markets.

TABLE 6-2: ANNUAL GROWTH IN EXPORTS AND IMPORTS, 1998

(Based on millions of 1992 dollars)

Province/Territory	*(Per cent)* *Exports*	*Imports*
Canada	7.1	5.5
Newfoundland	17.9	3.0
Prince Edward Island	7.7	(5.6)
Nova Scotia	7.4	10.5
New Brunswick	4.2	5.3
Quebec	7.0	7.1
Ontario	8.9	6.4
Manitoba	7.4	4.3
Saskatchewan	0.7	0.0
Alberta	5.8	4.6
British Columbia	2.6	1.6
Territories	0.0	4.5

Source: Statistics Canada, Cat. 13-213-ppb, Provincial Economic Accounts, 1998

Table 6-2 shows that Ontario outperformed all other provinces and territories in terms of growth in 1998. Growth was slower in Alberta and particularly in British Columbia. Among the smaller provinces, Newfoundland posted high export growth, again due to Hibernia. Exports grew less than imports in Quebec, New Brunswick, Nova Scotia, and the Territories.

PROVINCIAL TRANSPORTATION INDUSTRIES

Figure 6-3 shows each province's transportation industries as a percentage of the national totals. In terms of total transportation, the top four provinces — Ontario, Quebec, British Columbia and Alberta — are also the top provinces in terms of relative size of their provincial economies. Ontario is the only province to show a lower share of Canada's transport activities (33 per cent) than that of total economic activities (41 per cent). This can be explained by Ontario's proximity to its key markets (including large US markets), by the low share of primary commodities in its economy, and by its higher population density.

In contrast, British Columbia shows a higher share of total transport activity. Its transport industries accounted for 16.4 per cent of the national total, while its provincial gross domestic product (PGDP) stood at 12.3 per cent of the national GDP. Two reasons for this include its location as a hub for transport to Pacific Rim countries and its unique and challenging topography. Both Alberta[5] and Quebec exhibit shares similar to the size of their respective economies. All the smaller provinces exhibit transport shares higher than PGDP, particularly Manitoba and to a lesser extent New Brunswick. Each of these provinces serves as a base for western and eastern regional transport activities to and from central Canada, respectively.

The figures for provincial trucking as a proportion of national trucking reflect the distribution of total transportation industries. Exceptions are British Columbia at 11.1 per cent, where the lower share of trucking may reflect the mountainous terrain, and Alberta at 16.1 per cent, where the higher share of trucking may compensate for a lack of marine transport.

Ontario has the highest provincial share of national rail transportation, followed by the western provinces and Quebec. Manitoba and Saskatchewan have a slightly smaller share. This distribution reflects high production of primary commodities (e.g. wheat and coal) in Western Canada, a more dispersed population, and no direct marine access in the Prairie provinces.

The distribution of marine transportation is driven not so much by provincial economic importance as by access to water. Consequently, British Columbia has the largest share of national water transportation at 37 per cent, followed by Ontario, Quebec and Nova Scotia, which reflects the location of major ports. As expected, the island provinces of Newfoundland and Prince Edward Island also exhibit relatively high shares of marine transportation.

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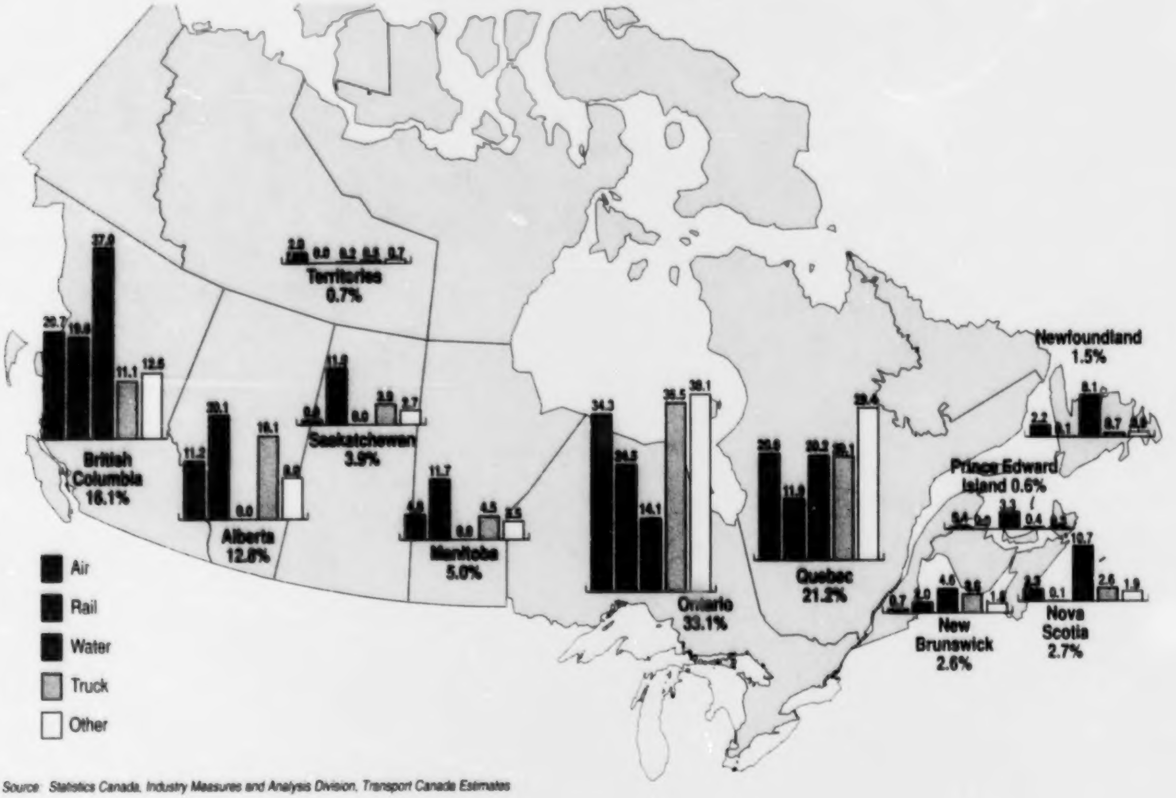
[5] The commercial carrier share of the provincial economies in Alberta principally, but also Saskatchewan, considerably underestimates transportation's importance to these provinces because the principal and most valuable primary commodities produced, i.e. oil and natural gas, are generally transported by pipeline. Pipelines are currently not considered transport by Transport Canada but will be considered as such in 2000, with the advent of North American Industrial Classification System.

FIGURE 6-3: PROVINCIAL TRANSPORTATION INDUSTRIES AS A PERCENTAGE OF NATIONAL TRANSPORTATION INDUSTRIES, 1998

(Based on value-added in millions of 1992 dollars)


2.0
0.0
0.2
0.5
0.7
Territories
0.7%
20.7
19.8
37.0
11.1
12.6
British Columbia
16.1%
11.2
20.1
0.0
16.1
8.0
Alberta
12.8%
0.8
11.8
0.0
3.9
2.7
Saskatchewan
3.9%
4.8
11.7
0.0
4.5
3.5
Manitoba
5.0%
34.3
24.5
14.1
35.5
38.1
Ontario
33.1%
20.8
11.9
20.2
19.1
29.4
Quebec
21.2%
Newfoundland
1.5%
2.2
0.1
8.1
0.7
0.8
Prince Edward Island 0.6%
0.4
0.0
3.1
0.4
0.3
0.7
2.0
4.6
3.6
1.6
New Brunswick
2.6%
2.3
0.1
10.7
2.6
1.9
Nova Scotia
2.7%
Air
Rail
Water
Truck
Other

Source: Statistics Canada, Industry Measures and Analysis Division, Transport Canada Estimates

Air transportation figures show that Ontario ranks highest of all provinces. British Columbia slightly exceeds Quebec, and Alberta ranks similarly to its provincial economy. British Columbia's position is again explained by the difficult terrain, as well as its function as a hub for Pacific Rim countries. In the smaller provinces, the relatively higher share of air transportation in Newfoundland and the territories results largely from their isolated geography.

The amount of other transportation recorded in the provinces is roughly related to their total economic activities. Different policies towards public transit may be reflected in the slightly higher percentages in Quebec and British Columbia, and a slightly lower percentage in Alberta.

PROVINCIAL GROWTH IN TRANSPORTATION

Table 6-3 shows 1997/98 annual growth in provincial transportation industries for the air, rail, marine, trucking and "other" modes. Provincial growth in transportation industries was driven primarily by Ontario, where economic growth was served largely by trucking services. In the other larger provinces, transportation growth was below economic growth. British Columbia, Manitoba and New Brunswick each showed a net decline.

TABLE 6-3: ANNUAL GROWTH IN PROVINCIAL TRANSPORTATION INDUSTRIES, 1998

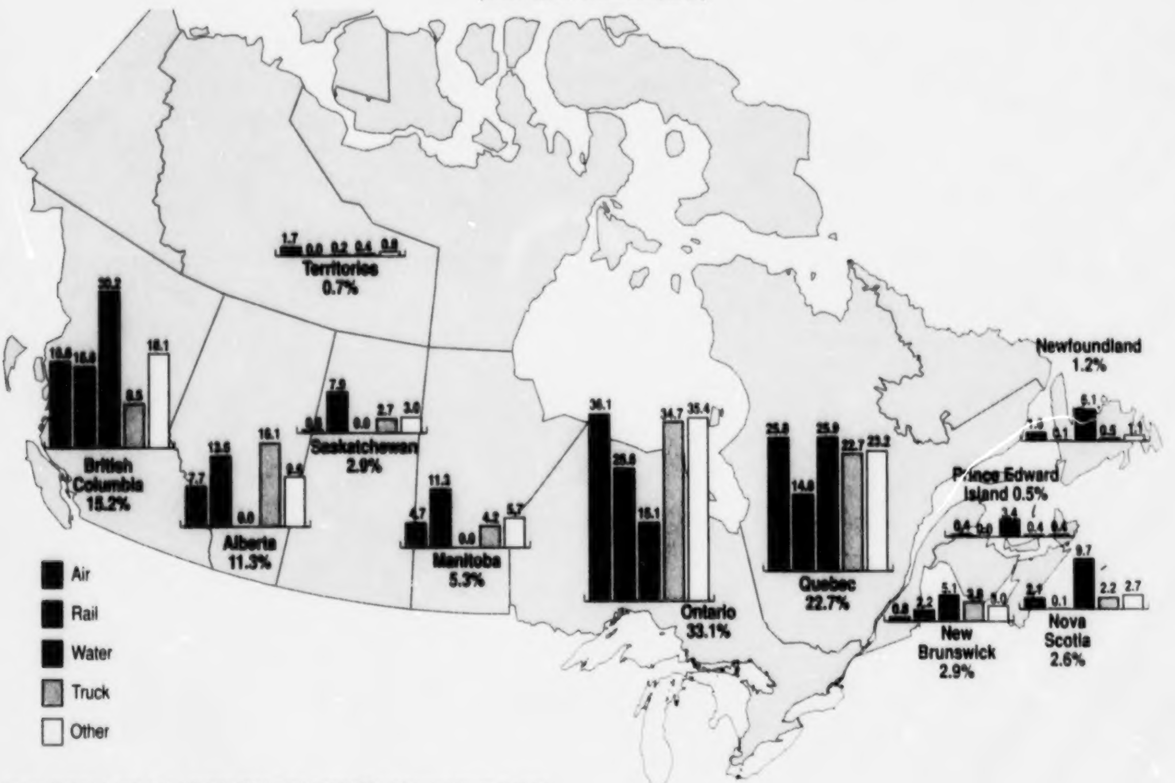
(Based on value-added in millions of 1992 dollars)

				(Per cent)			
Province/Territory	*Total*	*Air*	*Rail*	*Water*	*Truck*	*Other*	*GDP*
Canada	1.8	3.5	(2.6)	1.4	4.5	(0.5)	2.9
Newfoundland	3.1	1.8	(14.3)	12.0	(7.3)	(1.8)	6.7
Prince Edward Island	3.4	3.5	0.0	(4.9)	21.7	(1.7)	1.9
Nova Scotia	4.6	(3.1)	(68.4)	17.1	3.7	(1.2)	2.4
New Brunswick	(2.7)	5.2	(1.8)	(4.0)	(3.4)	(1.9)	2.9
Quebec	1.2	6.8	4.6	(1.9)	1.8	(1.6)	2.8
Ontario	4.2	4.3	(3.2)	3.9	8.8	0.5	4.0
Manitoba	(1.1)	7.0	(2.3)	0.0	(3.3)	(0.1)	3.6
Saskatchewan	1.3	3.5	(1.6)	0.0	5.3	(1.1)	0.7
Alberta	3.0	9.2	(5.2)	0.0	7.6	(2.5)	2.2
British Columbia	(1.4)	(2.7)	(2.7)	(1.8)	(0.5)	0.6	0.3
Territories	(8.3)	3.5	0.0	(62.7)	(15.6)	(0.8)	0.3

Source: Statistics Canada, Industry Measures and Analysis Division and Transport Canada estimates

FIGURE 6-4: PROVINCIAL TRANSPORTATION INDUSTRY EMPLOYMENT AS A PERCENTAGE OF NATIONAL TOTALS, 1998

(Based on thousands of workers)


1.7 0.0 0.2 0.4 0.8
Territories 0.7%
16.8 16.6 30.2 8.5 18.1
British Columbia 15.2%
7.7 13.6 0.0 16.1 9.6
Alberta 11.3%
0.8 7.9 0.0 2.7 3.0
Saskatchewan 2.9%
4.7 11.3 0.0 4.2 5.7
Manitoba 5.3%
36.1 25.6 15.1 34.7 35.4
Ontario 33.1%
25.8 14.8 25.9 22.7 23.2
Quebec 22.7%
1.5 0.1 6.1 0.5 1.1
Newfoundland 1.2%
0.4 0.0 3.4 0.4 0.4
Prince Edward Island 0.5%
0.6 2.2 5.1 3.8 3.0
New Brunswick 2.9%
2.1 0.1 9.7 2.2 2.7
Nova Scotia 2.6%
■ Air
■ Rail
■ Water
▨ Truck
☐ Other

Source: Statistics Canada, Labour Statistics Division, Cat. 72-002-XPB and Transport Canada Estimates

Trucking experienced strong growth due to exports, particularly in Ontario (8.8 per cent) and Alberta (7.8 per cent). In Prince Edward Island, trucking has grown rapidly since the bridge linking the island and the mainland was completed. Trucking declined in British Columbia, and the territories and Newfoundland experienced large declines.

Driven by weak world commodity prices, rail transportation registered declines in all provinces except Quebec.

Marine transportation showed negative growth in British Columbia and Quebec, and positive growth in Ontario. High growth in both Nova Scotia and Newfoundland resulted from increasing imports through Nova Scotia and the Hibernia oil fields in Newfoundland.

Transportation of passengers by air was relatively strong, particularly in Alberta and Quebec. Only British Columbia and Nova Scotia registered declines. Other transportation activities were either stagnant or declined in all provinces. Alberta showed a particularly large drop, which possibly reflects a decrease in the use of public transit.

EMPLOYMENT IN TRANSPORTATION INDUSTRIES

The indicator for provincial employment in transportation industries in 1998 produces much the same pattern as that provided by the value-added indicators. Figure 6-4 shows that the four largest provinces rank in order of economic size. Ontario exhibits a lower percentage than might be expected from its provincial economy, and British Columbia ranks slightly above the share of its PGDP.

The modal distribution also tracks the pattern of relative shares using the value-added indicators with a few exceptions. For instance a relatively higher employment figure shows up in Quebec for certain modes (air, rail and water), and relatively lower shares are apparent in Saskatchewan for rail and trucking.

PROVINCIAL GROWTH IN TRANSPORTATION EMPLOYMENT

Growth in transportation employment follows a similar pattern to the growth of value-added for the transportation industries, as shown in Table 6-4. Ontario led in growth with 2.6 per cent, followed by Quebec and Alberta, while British Columbia posted a decline. In the smaller provinces, transportation employment growth was strong in Newfoundland and Prince Edward Island but declined in Nova Scotia and Manitoba.

TABLE 6-4: ANNUAL GROWTH IN EMPLOYMENT IN THE PROVINCIAL TRANSPORTATION INDUSTRY, 1998

(Based on thousands of workers)

			(Per cent)			
Province/Territory	*Transport*	*Air*	*Rail*	*Water*	*Truck*	*Other*
Newfoundland	8.0	8.2	(14.5)	12.6	(11.1)	(0.5)
Prince Edward Island	13.6	11.2	0.0	(3.4)	18.0	0.9
Nova Scotia	(2.5)	(5.7)	(71.2)	7.8	(8.9)	(8.2)
New Brunswick	0.0	13.6	(0.5	(2.0)	(5.8)	1.0
Quebec	1.1	33.9	2.9	16.3	(2.0)	(0.3)
Ontario	2.6	15.4	(4.4)	8.7	4.9	2.0
Manitoba	(2.8)	12.5	(3.7)	0.0	(8.3)	0.6
Saskatchewan	0.8	10.9	(1.1)	0.0	1.9	1.4
Alberta	0.4	(1.6)	(7.5)	0.0	5.1	(3.9)
British Columbia	(2.4)	0.0	(6.3)	(4.6)	(7.7)	(1.1)
Territories	23.1	43.6	0.0	(51.0)	5.7	32.4
Canada	2.4	11.6	(2.0)	0.0	1.3	2.6

Source: Statistics Canada, Labour Statistics Division, Cat. 72-002-XPB and Transport Canada Estimates

Specifically, growth in trucking employment was strong in Ontario and Alberta, but declined in British Columbia. Rail employment declined in all provinces except Quebec. Marine employment grew strongly in Quebec and Ontario, did well in Newfoundland and Nova Scotia, but declined in British Columbia, Prince Edward Island and New Brunswick. Growth in air employment was strong in all provinces except Alberta, British Columbia and Nova Scotia. Other transport employment grew strongly in the territories, but growth was low or declined in all the provinces.

DEMAND FOR TRANSPORTATION

EXPENDITURES ON TRANSPORTATION

This section explores the demand for transportation by using the third indicator of the relative importance of regional transportation: expenditures on transport-related goods and services. Expenditures include:

- transport-related personal expenditures, e.g. cars
- business and government transport-related investment, e.g. trucks and roads
- government spending on transportation, e.g. road maintenance.

Figure 6-5 presents the distribution of national totals. Ontario accounts for the largest share of national transport demand at 40.7 per cent of the national total, roughly equivalent to the size of its economy. The other large provinces rank roughly in order of the size of their provincial economies, with British Columbia showing a slightly higher share of transport at 12.3 per cent than its economic size alone of 11.3 per cent would suggest. The smaller provinces have a share of total transport demand relatively close to the relative share of their provincial economies. As transport-related personal expenditures represent about two thirds of transport-related demand, the provincial distribution is similar to total transport demand. Appendix 6-1 provides more detail on personal expenditures.

A large proportion of investment in transportation occurs in Ontario. At 46.6 per cent, the share of total transport investment in Ontario is higher than the share of the province's economy in Canada's GDP. The other large provinces follow, in rough order of their economic size, with transport investment in British Columbia and Quebec lower than their share of GDP. In the smaller provinces, Nova Scotia has a slightly higher share in 1998 than would be expected, given the relative size of its provincial economy; and New Brunswick has a slightly lower share. Appendix 6-2 provides more detail on provincial investment.

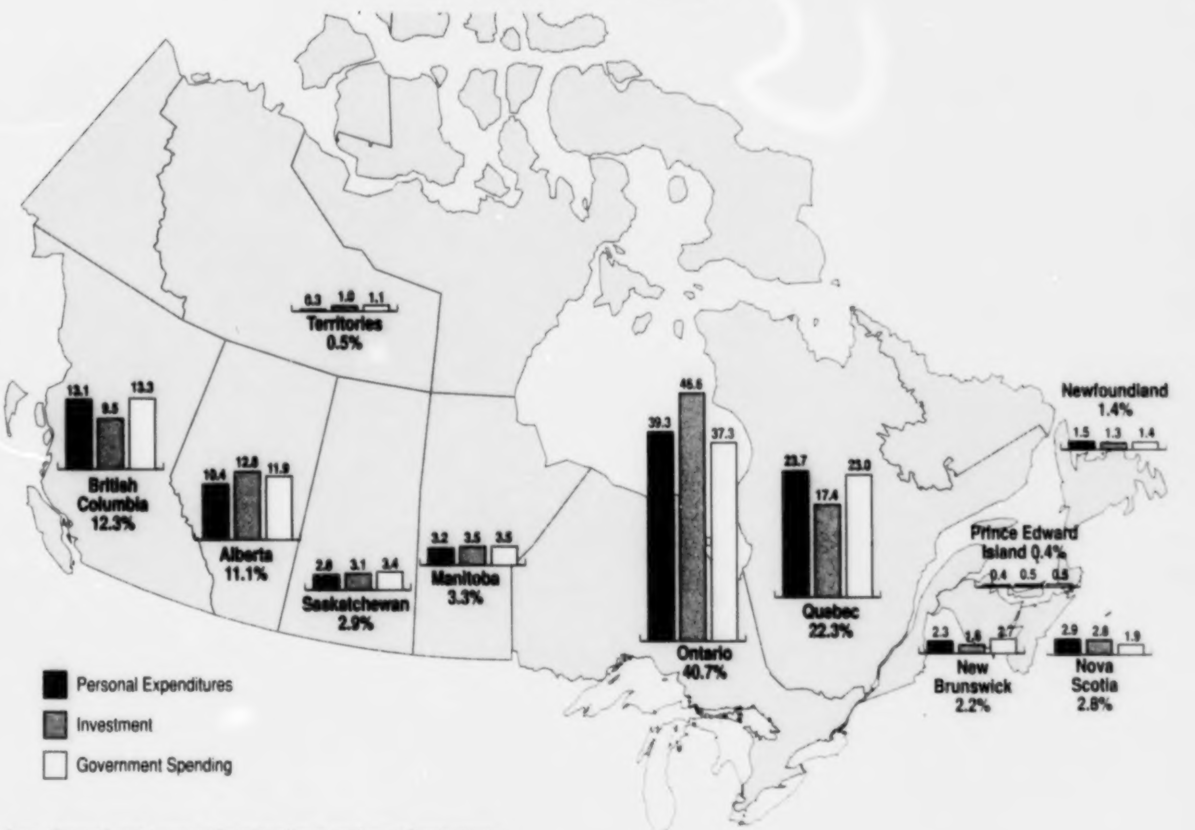
When ranked according to relative shares of national totals, government spending on transportation (primarily on road maintenance) is relatively close to the shares of provincial economic size. Ontario has a relatively lower level, at 37.3 per cent, compared with the size of its economy, along with Alberta, whereas British Columbia shows a relatively higher share. The smaller provinces also rank in rough order of the relative importance of their provincial economies. Higher shares of transport-related government spending occurred in Nova Scotia. More detail on government spending can be found in Chapter 3.

PROVINCIAL GROWTH IN TRANSPORTATION EXPENDITURES

In terms of growth in total transportation expenditures, national growth was driven largely by Ontario and Alberta, as shown in Table 6-5. In both provinces, growth came primarily from investment. In Quebec, transportation expenditures stayed the same despite declines both in investment and in government spending.

FIGURE 6-5: PROVINCIAL TRANSPORT-RELATED EXPENDITURES AS A PERCENTAGE OF NATIONAL TOTALS, 1998

(Based on millions of 1992 dollars)


0.3 1.0 1.1
Territories 0.5%
13.1 9.5 13.3
British Columbia 12.3%
10.4 12.8 11.9
Alberta 11.1%
2.8 3.1 3.4
Saskatchewan 2.9%
3.2 3.5 3.5
Manitoba 3.3%
39.3 46.6 37.3
Ontario 40.7%
23.7 17.4 23.0
Quebec 22.3%
Newfoundland 1.4%
1.5 1.3 1.4
Prince Edward Island 0.4%
0.4 0.5 0.5
2.3 1.8 2.7
New Brunswick 2.2%
2.9 2.8 1.9
Nova Scotia 2.8%
Personal Expenditures
Investment
Government Spending

Source: Statistics Canada, Income and Expenditures Division and Transport Canada estimates

In British Columbia, negative growth was observed as a result of declines in personal expenditures and investments on transportation.

In the smaller provinces, Newfoundland, Nova Scotia, New Brunswick, and Manitoba and Saskatchewan, growth in transport-related expenditures was relatively small. In Prince Edward Island, Nova Scotia and New Brunswick, declines were observed due to decreasing investment and government spending on transportation.

TABLE 6-5: ANNUAL GROWTH IN PROVINCIAL TRANSPORT-RELATED EXPENDITURES, 1998,

(Based on millions of 1992 dollars)

(Per Cent)

Province/Territory	*Personal Expenditures*	*Investment*	*Government Spending*	*Total*
Canada	2.6	7.6	(2.7)	3.1
Newfoundland	3.7	(5.5)	1.5	1.6
Prince Edward Island	1.6	(20.0)	(4.1)	(5.6)
Nova Scotia	4.2	(10.1)	(18.9)	(1.1)
New Brunswick	4.4	(29.5)	(9.4)	(4.6)
Quebec	2.6	(7.7)	(4.7)	0.0
Ontario	5.2	16.2	(3.6)	6.8
Manitoba	(0.9)	19.2	(6.2)	2.4
Saskatchewan	(2.9)	23.0	(4.4)	1.8
Alberta	1.9	37.5	1.7	8.9
British Columbia	(2.7)	(13.0)	9.0	(3.5)
Territories	(3.4)	0.9	(8.0)	(2.7)

Source: Statistics Canada, Income and Expenditures Division and Transport Canada estimates

APPENDIX 6-1: TRANSPORT-RELATED DEMAND

APPENDIX 6-1a: TRANSPORT-RELATED EXPENDITURES BY PROVINCE AS PERCENTAGES OF NATIONAL TOTALS, 1998

(Based on millions of 1992 dollars)

	(Per cent)									
	Personal Expenditures (1)	*New and Used Vehicles*	*Repair and Maintenance Expenditures*	*Fuels and Lubricants*	*Purchased Transport*	*Investment (2)*	*Infrastructure*	*Machinery and Equipment*	*Government Spending (3)*	*Total Expenditures (1+2+3)*
Newfoundland	1.5	1.4	1.3	1.9	1.2	1.3	2.8	0.7	1.4	1.4
Prince Edward Island	0.4	0.3	0.4	0.6	0.2	0.5	1.6	0.1	0.5	0.4
Nova Scotia	2.9	2.8	2.4	3.8	2.4	2.8	3.0	2.8	1.9	2.8
New Brunswick	2.3	2.6	2.1	2.9	1.1	1.6	4.4	0.5	2.7	2.2
Quebec	23.7	24.4	26.1	23.3	18.6	17.4	21.3	15.8	23.0	22.3
Ontario	39.3	40.5	38.4	36.9	40.9	46.6	32.5	52.4	37.3	40.7
Manitoba	3.2	3.1	3.1	3.2	3.2	3.5	4.0	3.2	3.5	3.3
Saskatchewan	2.8	2.7	3.0	3.4	1.9	3.1	2.4	3.4	3.4	2.9
Alberta	10.4	11.2	9.2	10.4	10.1	12.8	8.9	14.4	11.9	11.1
British Columbia	13.1	10.7	13.5	13.2	19.1	9.5	15.8	6.9	13.3	12.3
Territories	0.3	0.2	0.3	0.2	0.9	1.0	3.3	0.0	1.1	0.5

Source: *Statistics Canada, Income and Expenditures Division and Transport Canada estimates*

APPENDIX 6-1b: ANNUAL GROWTH IN TRANSPORT-RELATED EXPENDITURES BY PROVINCE IN 1998

(Based on millions of 1992 dollars)

	(Per cent)									
	Personal Expenditures (1)	*New and Used Vehicles*	*Repair and Maintenance Expenditures*	*Fuels and Lubricants*	*Purchased Transport*	*Investment (2)*	*Infrastructure*	*Machinery and Equipment*	*Government Spending (3)*	*Total Expenditures (1+2+3)*
Canada	2.6	3.0	1.5	3.6	2.0	7.6	2.4	9.9	(2.7)	3.1
Newfoundland	3.7	8.3	0.4	0.7	2.5	(5.5)	27.5	(34.4)	1.5	1.6
Prince Edward Island	1.6	2.2	0.7	2.8	(2.9)	(20.0)	(15.2)	(52.8)	(4.1)	(5.6)
Nova Scotia	4.2	8.5	0.5	2.3	1.7	(10.1)	(10.6)	(9.8)	(18.9)	(1.1)
New Brunswick	4.4	8.3	3.9	0.0	0.5	(29.5)	(20.0)	(51.8)	(9.4)	(4.6)
Quebec	2.6	3.4	1.2	3.0	2.6	(7.7)	5.2	(13.7)	(4.7)	0.0
Ontario	5.2	7.8	2.7	4.4	3.2	16.2	(5.7)	23.6	(3.6)	6.8
Manitoba	(0.9)	(2.9)	(0.9)	1.9	0.9	19.2	18.9	19.3	(6.2)	2.4
Saskatchewan	(2.9)	(8.2)	(2.0)	2.8	3.6	23.0	(4.9)	34.9	(4.4)	1.8
Alberta	1.9	1.4	1.6	3.1	2.3	37.5	17.7	43.7	1.7	8.9
British Columbia	(2.7)	(9.6)	0.3	5.0	(1.5)	(13.0)	16.6	(30.0)	9.0	(3.5)
Territories	(3.4)	(19.3)	(2.7)	0.3	7.5	0.9	9.2	(78.1)	(8.0)	(2.7)

Source: *Statistics Canada, Income and Expenditures Division and Transport Canada estimates*

APPENDIX 6-2: TRANSPORT-RELATED INVESTMENT

PROVINCIAL TRANSPORT-RELATED INVESTMENT AS A PERCENTAGE OF NATIONAL INVESTMENT, 1997

(Based on current dollars)

	(Per cent)										
Transportation Investment	*Nfld.*	*P.E.I.*	*N.S.*	*N.B.*	*Que.*	*Ont.*	*Man.*	*Sask.*	*Alta.*	*B.C.*	*Terr.*
Warehouses, Freight Terminals	1.7	1.3	7.2	4.7	16.9	30.1	4.7	2.6	14.1	16.3	0.3
Grain Elevators and Terminals	0.0	0.0	x	0.2	x	x	0.0	x	x	x	x
Maintenance Garages, Equipment Storage, Workshops	1.0	0.3	3.1	5.0	22.3	29.5	3.6	3.5	13.8	12.7	4.9
Railway Shops Engine Houses	0.0	x	x	0.6	5.1	x	0.0	x	x	x	x
Aircraft Hangars	0.6	0.6	x	x	18.5	22.0	x	0.8	19.6	5.9	0.7
Passenger Terminals	1.0	0.7	2.0	0.5	33.1	33.6	2.1	1.9	6.3	17.5	x
Total Building Construction	**1.1**	**0.7**	**3.6**	**3.4**	**21.7**	**28.4**	**3.2**	**2.6**	**11.8**	**13.5**	**x**
Marine Engineering Construction	23.9	0.9	3.6	4.6	11.5	31.1	8.8	0.7	2.2	11.7	1.1
Highways, Roads, Streets	2.6	1.0	3.7	x	22.8	37.3	2.8	2.4	7.8	13.4	x
Runways Including Lighting	x	0.4	0.4	0.3	x	40.5	x	x	8.7	x	5.4
Rail Track and Roadbeds, including Signals	0.1	0.0	0.8	1.1	x	39.3	7.7	5.4	11.9	21.9	x
Bridges, Trestles, Overpasses	x	14.4	6.0	17.0	14.7	19.0	5.9	2.4	4.2	13.7	x
Tunnels	0.4	x	0.9	1.3	37.0	26.4	6.6	3.1	7.9	16.7	x
Other Transportation	0.0	1.9	5.8	x	63.5	9.6	x	x	3.8	x	0.0
Total Engineering Construction	**3.8**	**1.9**	**3.5**	**5.6**	**20.5**	**35.6**	**3.9**	**2.5**	**7.5**	**14.0**	**1.0**
Industrial Containers	1.3	0.4	2.4	1.1	18.2	37.5	2.4	3.1	22.4	11.0	0.4
Automobiles	0.8	0.1	3.9	0.9	20.9	49.3	2.5	2.0	10.0	9.6	0.1
Buses (All Types)	0.5	0.1	1.5	0.5	35.0	38.9	2.9	1.6	3.0	16.0	0.1
Trucks, Vans, Truck Tractors and Truck Trailers	1.0	0.3	2.4	1.4	16.2	42.9	4.2	5.2	16.3	9.8	0.5
All-Terrain Vehicles	1.1	0.1	x	2.2	27.7	40.9	2.2	1.2	x	14.3	0.2
Locomotives, Rolling Stock, Street and Subway Cars	x	0.0	0.4	1.0	9.4	42.5	6.2	8.1	10.0	21.5	x
Ships and Boats	x	0.4	4.1	3.1	20.3	22.2	1.2	0.4	x	31.0	0.3
Aircraft, Helicopters and Aircraft Engines	1.6	0.3	x	1.6	23.7	43.0	2.6	2.0	11.6	10.5	x
Other Transportation Equipment	1.8	0.0	2.6	1.3	27.4	23.8	9.9	0.4	25.6	7.1	0.0
Total Transportation Equipment	**1.1**	**0.1**	**3.4**	**1.1**	**20.1**	**46.6**	**3.0**	**3.3**	**11.0**	**10.8**	**0.1**
TOTAL TRANSPORTATION	**1.7**	**0.5**	**3.4**	**2.2**	**20.3**	**43.3**	**3.2**	**3.1**	**10.3**	**11.6**	**0.4**

Note: X indicates that confidential data are suppressed.

Source: Statistics Canada, Cat. 61-223-xib, Capital Expenditures by Type of Asset, 1997

TRANSPORTATION AND EMPLOYMENT

7

There has been a slight decrease in transportation's proportion of employees in Canada's workforce. Trucking continues to employ the largest number, followed by air transportation.

There were 14.7 million people employed in Canada in 1999. Of this total, 12 million were full-time and 2.7 million were part-time employees. Transportation was an important contributor to the overall employment picture. With almost 828,000 people employed full-time in this sector, transportation accounted for 6.9 per cent of full-time employment in Canada.

This chapter covers three specific areas: first, the workforce, which is the total number of people whose jobs are directly tied to the transportation sector; second, the average annual salary earned by transportation employees; and third, labour relations in the transportation sector.

This report only covers full-time jobs directly associated with transportation. It does not deal with jobs in associated industries, such as manufacturing (vehicles, parts, signs, other transport-related products), the service sector (motels, restaurants, towing services, maintenance of equipment, automobile sales, and other services) or other areas that depend primarily on the transportation sector.

As noted where appropriate throughout this chapter, the overall picture is incomplete in some areas. This is due primarily to a lack of data, usually on a detailed level, which would allow for a better understanding of jobs and functions directly associated with transportation. Timeliness of the availability of data is also a serious issue, as it affects the ability to include current data and related modal comparisons. In most instances, this report does not include "soft" figures, i.e. estimated, derived or unverifiable data. Finally, there have in some cases been changes in jurisdiction — such as the commercialization of ports, airports and air navigation services, and the proliferation of short-line railways — that have led to a change in type or scope of data, which in turn have made historical comparisons difficult.

WORKFORCE

An estimated 827,922 people worked full-time in the transportation sector in 1999, representing 6.9 per cent of total full-time employment in Canada. This was slightly less than in 1998, when transportation made up seven per cent. In 1997 and 1996, transportation accounted for 7.0 and 7.1 per cent, respectively, while in 1995 an estimated 7.2 per cent of full-time employees were directly associated with the transportation sector.

This report categorizes transportation-related jobs as follows:

- transport services
- transportation infrastructure
- government services tied to transportation
- other associated jobs.

In 1999, transport services accounted for an estimated 614,451 jobs, or 74.2 per cent of the total full-time workforce directly associated with transportation. Related services, such as marine pilotage and tour operators, made up 94,600 jobs (11.4 per cent), while jobs related to the development and maintenance of infrastructure accounted for 85,600 positions (10.4 per cent). Transport-related jobs in the federal and provincial governments accounted for the rest (four per cent).

Keeping in mind that this chapter considers only full-time jobs directly associated with any segment of the industry, the trucking industry is the most important employer in the transportation sector, accounting for 36.5 per cent of all positions. Air transportation is the second largest employer with an estimated 14.2 per cent of all transport jobs.

Table 7-1 compares employment, by category, for the transportation industry.

TABLE 7-1: TRANSPORTATION EMPLOYMENT BY CATEGORY

(Thousands of workers)

	1990	*1995*	*1996*	*1997*	*1998*	*1999[e]*
Transport Services						
Air[A]	68.2	60.9	61.5	70.2	78.2	84.1
Marine[B]	30.0	32.0	29.5	26.7	26.1	27.9
Rail[C]	50.5	37.9	35.1	34.0	32.4	32.7
Truck[D]	262.1	286.4	294.1	298.0	298.2	302.0
Bus/Urban Transit[E]	69.2	61.0	59.2	61.5	63.2	67.6
Local Services[F]	31.2	34.7	35.5	36.4	37.3	38.2
Other[G]	87.9	69.3	64.9	63.2	62.5	63.2
Total	**599.1**	**582.2**	**579.8**	**590.1**	**597.9**	**614.4**
Transport Infrastructure						
Air[H]	N/A	N/A	N/A	N/A	2.5	2.8
Marine[I]	2.0	1.7	1.7	1.6	1.5	1.5
Rail[J]	18.6	13.8	12.9	12.5	12.6	12.3
Highway[K]	60.0	67.4	68.8	68.9	69.0	69.0
Total	**80.6**	**82.9**	**83.4**	**83.0**	**85.6**	**85.6**
Government Services[L]	**42.7**	**40.4**	**32.5**	**28.7**	**28.0**	**27.9**
Associated Services						
Air[M]	22.2	31.1	29.5	30.5	30.5	31.2
Marine[N]	8.2	8.0	6.9	7.0	6.8	6.7
Other services[O]	47.4	50.7	50.1	53.3	53.2	53.2
Total	**82.8**	**91.5**	**89.0**	**93.0**	**93.9**	**94.6**
Grand Total[P]	**805.2**	**797.0**	**784.7**	**794.7**	**811.2**	**827.9**

Note: Due to confidential data that has only been included in Totals or the Grand Total, the individual sections do not necessarily add to the sums shown in the table.
e: Transport Canada estimate **N/A:** not available

Sources:

A 1999 based on twelve months of averaged annual data. Statistics Canada Survey of Employment, Payrolls and Hours (SEPH)
B Statistics Canada, SEPH. 1999 based on 12 months of averaged annual data
C Transport Canada estimates based on Statistics Canada Cat. 52-216
D Statistics Canada Cat. 53-222-XPB, SEPH, Transport Canada
E Statistics Canada Cat 53-215, Transport Canada
F Transport Canada estimates based on 1991 & 1996 Census data
G Public Transit residual, Other Transportation residual, Pipeline Transportation, SEPH
H Canadian Airport Authorities, Local Airport Authorities, Transport Canada
I St. Lawrence Seaway Management Corp., Canadian Port Authorities
J Transport Canada estimates based on Statistics Canada Cat. 52-216
K Transport Canada estimates based on 1986, 1991, 1996 Census data
L Government Estimates, Transport Canada estimates for provincial and territorial employment
M Statistics Canada, SEPH – Travel Services
N Pilotage Authorities, BCMEA, MEA
O Insurance Bureau of Canada, Census
P Excludes part-time employees

TRANSPORT SERVICES

RAIL

The numbers for personnel involved in the direct provision of rail transport services include engineers, conductors and workers who carry out equipment maintenance, as well as an estimate of carrier managerial and administration staff allocated to transportation services.[1]

The estimated number of people involved in the provision of rail transportation services dropped significantly in all job categories between 1990 and 1998 (36 per cent). Equipment maintenance workers were the most affected, with a 47 per cent decrease.[2] Contracting out may have contributed to some portion of the recent declines, but the number of employees associated with contract work is not known at the time of writing.

In 1998, there was a 4.5 per cent decline in total personnel employed in rail transport services, incurred entirely by the Class I carriers.

Table 7-2 shows employment in rail transportation services, for Class I, II and III carriers, since 1990.[3]

TABLE 7-2: EMPLOYMENT BY RAIL TRANSPORT SERVICES

	Total Rail[1]	*Transport Services*	*Per cent of total[2]*	*Class I*	*Class II and III*
1990					
General[3]		8,457		7,685	772
Transportation		23,598		20,819	2,779
Equipment maintenance		18,477		16,618	1,859
Total	69,119	50,532	73.1	45,122	5,410
1995					
General[3]		6,801		6,236	565
Transportation		19,719		17,676	2,043
Equipment maintenance		11,405		10,243	1,162
Total	51,754	37,925	73.3	34,155	3,770
1996					
General[3]		6,013		5,477	536
Transportation		18,206		16,225	1,981
Equipment maintenance		10,886		9,757	1,129
Total	48,038	35,105	73.1	31,459	3,646
1997					
General[3]		5,783		5,288	495
Transportation		17,698		15,684	2,014
Equipment maintenance		10,477		9,352	1,125
Total	46,493	33,958	73.0	30,324	3,634
1998[4]					
General[3]		5,768		5,298	470
Transportation		16,774		14,708	2,066
Equipment maintenance		9,871		8,774	1,097
Total	44,979	32,413	72.1	28,780	3,633

1 Total Rail employment limited to carrier personnel, does not include incidental rail services.
2 Total transport service as a percentage of total rail carrier employment..
3 Estimated number of managerial and administrative personnel allocated to transport services.
4 Data for 1998 may be understated due to exclusion of a number of small Class III railways.

Source: Statistics Canada, Cat. 53-216, Transport Canada estimates.

TRUCKING

Medium and Large For-Hire Trucking Firms

In 1998, medium and large for-hire trucking firms[4] employed an estimated 31 per cent of all personnel engaged in trucking activity in Canada. The total number of employees grew by 0.8 per cent from 1997 levels. The number of company drivers increased by 2.9 per cent, while the number of "other" employees dropped by 1.8 per cent. The number of "other employees" has been fluctuating since 1995, which may be a function of the survey rather than a representation of actual industry trends.

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[1] 1998 is the most recent year for which this level of information is available.

[2] A large part of this decline occurred between 1993 and 1995 as a result of the industry's labour reduction program, including the sale of CN subsidiary AMF Technotransport, which had previously been included in CN's Canadian Rail Operations.

[3] Rail data in Table 7-1 includes Class III carriers and jobs related to incidental services.

[4] Includes all Canadian-domiciled for-hire companies that reported $1 million or more in operating revenues for the year under consideration.

Since 1991, company drivers have accounted for approximately 57 per cent of all company employees in medium and large for-hire firms. This trend held true in 1998, with drivers making up 57.1 per cent of all employees. The range varied from a low of 55.7 per cent in 1995 to a high of 58.2 per cent in 1996.

Table 7-3 shows employment levels at medium and large for-hire firms for the period 1991 to 1998.

Ontario firms continue to employ the largest proportion of drivers in Canada, accounting for 40 per cent of all drivers for large for-hire carriers in 1998. Firms in the Prairie Provinces and Quebec accounted for 24 and 21 per cent, respectively, of all drivers for medium to large for-hire companies. The total number of employees increased in all regions except British Columbia and the Territories.

TABLE 7-3: EMPLOYMENT BY FOR-HIRE TRUCKING FIRMS[1]

	Company drivers	Other employees[2]	Total employees
1991	41,725	30,892	72,617
1995	50,323	39,963	90,286
1996[3]	51,833	37,182	89,015
1997[3]	51,256	40,397	91,653
1998[3]	52,739	39,685	92,424

1 Includes Canadian-domiciled for-hire carriers with annual revenues of $1 million or more
2 Maintenance, garage, terminal and other employees.
3 Annual figures are an average of quarterly data for each year.

Source: Statistics Canada, Cat. 53-222-XPB

Table 7-4 compares employment, by region, for the trucking industry.

Small For-Hire Carriers

In 1997, the number of full-time employees associated with small for-hire carriers[5] decreased by 2.7 per cent from 1996. While there were large drops in Quebec (26 per cent) and Ontario (13 per cent), all other regions saw increases: Atlantic, 14.6 per cent; Prairie Provinces, 40 per cent; and British Columbia, 6.3 per cent.

Table 7.4 shows the number of full and part-time workers employed by the small for-hire trucking industry in Canada.

TABLE 7-4: EMPLOYMENT BY REGION, TRUCKING INDUSTRY

		Canada	Atlantic Region	Quebec	Ontario	Prairie Provinces	British Columbia	Territories
Employment by Medium and Large For-Hire Firms[1]								
1997	Company drivers	51,256	3,100	10,519	20,779	12,520	4,338	N/A
	Other company employees	40,397	3,467	6,858	17,209	9,728	3,135	N/A
	Total company employees	91,653	6,567	17,377	37,988	22,248	7,473	N/A
1998	Company drivers	52,739	3,132	11,969	20,793	12,854	3,971	N/A
	Other company employees	39,685	3,907	7,295	16,626	9,120	2,737	N/A
	Total company employees	92,424	7,039	19,284	37,420	21,974	6,708	N/A
Employment by small For-Hire Trucking Firms[2]								
1996	Full-time	26,353	1,667	9,586	6,044	5,293	3,733	30
	Part-time	9,401	779	2,917	2,607	1,636	1,446	16
1997[2]	Full-time	25,624	1,911	7,065	5,265	7,415	3,968	N/A
	Part-time	9,409	796	1,805	2,429	2,837	1,542	N/A
Employment by private carriers								
1997	Highway drivers	4,379	133	1,007	2,364	533	342	N/A
	Local drivers	8,001	433	2,297	2,897	1,257	1,117	N/A
	Other employees	5,212	154	1,596	2,326	469	667	N/A
	Total	17,592	720	4,900	7,587	2,259	2,126	N/A
1998	Highway drivers	4,014	184	1,085	2,054	546	145	N/A
	Local drivers	5,923	232	1,606	2,885	813	387	N/A
	Other employees	3,285	138	1,018	1,484	330	315	N/A
	Total	13,222	554	3,709	6,423	1,689	847	N/A
Full-time employees: Owner Operators[2]								
1996		61,377	4,684	10,266	17,492	16,256	12,592	86
1997		64,235	5,687	12,566	18,556	17,983	9,310	N/A

1 British Columbia includes employment figures for the Territories.
2 1998 data not available.

Source: Statistics Canada, Cat. 53-222-XPB

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[5] Small for-hire carriers include Canadian-based companies with operating revenues greater than or equal to $30,000 and less than $1 million. 1997 is the most current year for available data.

Private Carriers

In 1998, there were 396 private carriers[6] reporting in Canada, down from 422 in 1997. The number of employees reported by these carriers also decreased substantially, down 25 per cent. The number of highway drivers decreased by eight per cent, while local drivers and "other" employees dropped by 26 and 37 per cent, respectively. The figures indicate that a number of the private carriers that did not report in 1998 were involved extensively in local operations.

In terms of proportional decline, British Columbia and the Territories had the largest decrease in the number of personnel employed by private companies, at 60 per cent. The number of employees in the Prairie Provinces, Quebec and Atlantic Region decreased by 25, 24 and 23 per cent, respectively. Ontario saw a decline of 15 per cent.

Table 7-4 shows total employment by private trucking carriers for 1997 and 1998.

Owner-Operators

In 1997, 40,000 owner-operators employed 64,235 full-time employees. The largest proportion (29 per cent) was in Ontario. Owner-operators in the Prairie Provinces were the next largest group, with 28 per cent of the total employees. Quebec, British Columbia and the Atlantic Region accounted for 20, 14.5 and 8.5 per cent, respectively.

Table 7-4 shows the number of full-time employees associated with owner-operators for 1996 and 1997.[7]

Total Trucking Employment

Total full-time employment in the trucking industry increased by 1.2 per cent in 1997. While actual data for a number of components of the industry for 1998 and 1999 are not available, estimates indicate that the workforce was stable in 1998 and saw a small increase of about one per cent in 1999. Employment by medium and large for-hire carriers increased slightly in 1998 (0.8 per cent), while the number of people employed by private carriers appears to have decreased significantly.

Table 7-5 compares employment, by sector, in the trucking industry from 1991 to 1998.[8]

TABLE 7-5: TOTAL EMPLOYMENT IN THE TRUCKING INDUSTRY

	Medium / Large For-Hire[1]	*Small For-Hire*[2]	*Private*[3]	*Owner-Operator*[4]	*Sub-total*	*Delivery Drivers*[5]	Total
1991	72,617	27,355	27,184	52,000	179,156	90,310	269,466
1995	90,286	32,388	20,242	57,335	200,251	95,940	296,191
1996	89,015	35,754	19,993	61,377	206,139	97,400	303,539
1997	91,653	35,033	17,592	64,235	208,513	98,900	307,413
1998	92,424	N/A	13,222	N/A	N/A	N/A	N/A

1 Includes Canadian-domiciled for-hire carriers with annual operating revenues of $1 million or more.
2 Includes Canadian-domiciled for-hire carriers with annual operating revenues greater than $25,000 and less than $1 million. Estimated for 1991. Includes part-time employees.
3 Includes Canadian-domiciled private carriers with annual operating expenses of $1 million or more. Estimated for 1991.
4 Estimated value for 1991.
5 Based on 1991 and 1996 Census data; estimated values for 1995 and 1997.

Sources: Statistics Canada, Cat. 53-222-XPB, SEPH and Transport Canada

BUS

Employment figures for large[9] intercity and school bus operators appear to have shifted significantly between 1997 and 1998. In 1998, 14 large intercity carriers reported 1,206 full-time employees.[10] This was a 60 per cent decrease from the 2,960 full-time employees reported by 15 large intercity bus companies in 1997.[11] Conversely, 91 large school bus companies reported 22,192 full-time employees in 1998,[12] a 19 per cent increase if compared with the 81 large companies that reported in 1997.[13]

Employment figures in the charter and other bus industry also appear to be somewhat unstable, with a 15 per cent decline in 1997 followed by a 22 per cent increase in 1998. In 1996, employment appeared to have increased by 39 per cent from 1995. While only two years of employment information are available for the shuttle services sector, the data also appears unstable, with a 21 per cent decrease being reported for 1998.

In 1998, 62 urban transit companies reported a full-time compliment of just under 36,000 employees. This was 1.7 per cent below employment levels reported for 1997. Between 1990 and 1998, the number of full-time employees in this sector decreased by five per cent.

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[6] Data limited to Canadian-based carriers with annual operating expenses of $1 million or more.

[7] 1997 is the most recent year for which data is available.

[8] Threshold changes were made in the trucking surveys in 1990, therefore the time-series shown starts at 1991.

[9] Companies with annual revenues of $2 million or more.

[10] There were 16 additional carriers with annual revenues between $200,000 and $2 million that did not report employment data.

[11] There were 13 additional carriers with annual revenues between $200,000 and $2 million that did not report employment data.

[12] There were 722 additional companies with annual revenues between $200,000 and $2 million that did not report employment data.

[13] There were 580 additional companies with annual revenues between $200,000 and $2 million that did not report employment data.

These apparent shifts in the employment numbers can be explained by a number of factors. Since the mid-1990s, the industry has gone through a period of consolidation, mergers and acquisitions. In addition, starting in 1997, data for the bus industry has been reported according to the North American Industrial Classification System (NAICS). Under NAICS, companies are classified by industry according to their main activity, which may change from year to year. For example, in 1996 there were 43 companies reporting under SIC 4572 (Scheduled Intercity Bus Industry). Under NAICS there would have been only 29. Also, because the bus industry has become more dynamic over recent years, companies are involved in more than one sector (e.g. intercity, school bus, charter and shuttle activities).

Table 7-6 shows full-time employment figures for the bus industry for the period 1990 to 1998.

TABLE 7-6: FULL-TIME EMPLOYEES IN THE BUS INDUSTRY[1]

	1990	*1995*	*1996*	*1997*	*1998*
Intercity Operators					
Drivers	2,457	1,643	1,419	1,446	690
Mechanics	591	242	149	145	60
Other	2,062	1,660	1,571	1,369	456
Total	5,110	3,545	3,139	2,960	1,206
School Bus Operators					
Drivers	20,544	15,007	13,638	16,370	18,879
Mechanics	1,198	820	780	861	990
Other	1,553	1,663	1,398	1,478	2,323
Total	23,295	17,490	15,816	18,709	22,192
Charter and Other					
Drivers	2,218	1,720	2,431	2,184	2,628
Mechanics	215	214	219	190	287
Other	390	508	740	502	600
Total	2,823	2,442	3,390	2,876	3,515
Shuttle Services[2]					
Drivers				402	338
Mechanics				30	13
Other				74	49
Total	N/A	N/A	N/A	506	400
Urban Transit					
General and administration	3,810	4,160	4,114	4,014	3,344
Transport operations	23,884	25,447	22,807	22,474	22,697
Vehicle maintenance	10,248	7,886	9,931	9,990	9,826
Total	37,942	37,494	36,852	36,478	35,867
Total Full-time employees[3]	69,170	60,971	59,197	61,529	63,180

1 1990 includes full-time employees of companies with annual operating revenues of $500,000 or more; 1995–1998 inclusive includes full-time workers of companies with annual revenues greater than $2 million.

2 Data not available prior to 1997.

3 Employment data not available for "Scenic and Sightseeing Transportation" by bus.

Source: Statistics Canada, Cat. 53-215 XPB

TAXI AND LIMOUSINE SERVICES

According to census data, there were 35,490 taxi and limousine drivers in Canada in 1996, an 18 per cent increase from 1986 levels. Three provinces accounted for 76 per cent of all taxi and limousine drivers employed in Canada during 1996. Ontario accounted for 40 per cent of drivers, an increase of 27 per cent from 1986 levels. Quebec employed 24 per cent, up ten per cent from 1986, while British Columbia employed 12 per cent, up 16 per cent.[14]

MARINE

Average annual employment in the water transport industry, including services incidental to water transportation, increased by seven per cent in 1999 over 1998 levels[15]. Historically, employment has declined by 13 per cent since 1995.

In 1999, 42 per cent of all people working in the water transport industry, not including services incidental to water transport, were located in British Columbia. The Atlantic Region accounted for another 18 per cent, while Ontario and Quebec accounted for 16 and 15 per cent, respectively.

Ferry operations account for a large proportion of employment in the marine transport services sector, generating about two thirds of all transportation jobs provided by Canadian-based carriers.

Table 7-7 shows average annual employment in the water transport sector, by region.

TABLE 7-7: AVERAGE ANNUAL EMPLOYMENT IN THE WATER TRANSPORT INDUSTRY

	1990	*1995*	*1996*	*1997*	*1998*	*1999*
Atlantic Region[1]	3,767	N/A	3,482	3,461	3,945	4,240[3]
Quebec[1]	2,891	3,546	3,068	2,516	2,268	2,463
Ontario[1]	4,062	3,649	2,883	2,361	2,463	2,707
British Columbia[1]	5,751	7,331	8,073	7,554	6,669	6,929
Other Regions[1]	495	N/A	276	248	169	151
Canada[1]	16,966	18,131	17,782	16,140	15,514	16,490
Total[2]	30,028	32,020	29,517	26,726	26,097	27,911

Note: Figures for period are based on 12 months annual weighted data.

1 Does not include incidental services.

2 Includes incidental services.

3 1999 figure for Atlantic Region includes estimates by Transport Canada of marine employees not engaged in marine incidental services who are located in the provinces of Newfoundland and Prince Edward Island.

Source: Statistics Canada, Survey of Employment, Payrolls and Hours (SEPH)

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[14] Estimates for this sector have been included in the aggregate figures for 1997, 1998 and 1999. Actual updated numbers will not be available until the next Census in 2001.

[15] Detailed carrier level employment data, as reported in the 1998 report, are no longer available.

AIR

After a decline from 1990 to 1995, employment in the air industry has grown by 38 per cent between 1995 and 1999. The last two years saw significant increases: in 1998 and 1999 total employment grew over 11 and seven per cent, respectively.

Following a significant decline between 1990 and 1995, total employment by Levels I-III air carriers exceeded 1990 levels in 1998.[16] There were increases in all employment categories. The number of pilots and copilots and other flight personnel increased by ten per cent. Management and administration personnel grew by 11 per cent, and the number of other carrier personnel increased by just over nine per cent. Employment by Level IV carriers increased by 25 per cent between 1997 and 1998.

Table 7-8 compares Level I-IV air carrier employment levels with that of the total air industry.

TABLE 7-8: EMPLOYMENT IN THE AIR INDUSTRY

	1990	*1995*	*1996*	*1997*	*1998*	*1999*
Pilots and Copilots	6,080	6,295	6,478	6,549	7,205	N/A
Other Flight Personnel	8,691	8,010	8,593	9,126	10,054	N/A
Management and Admin.	3,467	3,590	3,523	3,631	4,022	N/A
Other Carrier Personnel	33,738	28,408	28,411	29,200	31,831	N/A
Total Levels I-III[1]	51,976	46,303	47,005	48,506	53,112	N/A
Total Level IV[2]	4,355	4,077	4,537	4,361	5,456	N/A
Total Levels I-IV	56,331	50,380	51,542	52,867	58,568	N/A
Total, Including Incidental Services[3]	68,194	60,870	61,475	70,232	78,223	84,058

1 Canadian air carriers that in each of the two calendar years immediately preceding the report year transported 5,000 revenue passengers or more or 1,000 tonnes of revenue goods or more.

2 Canadian air carriers not classified in Levels I-III that, in each of the two calendar years immediately preceding the report year, realized annual gross revenues of less than $500,000 for air services for which the air carrier had a licence.

3 Incidental services: jobs that are associated with the air industry but are not defined in Statistics Canada, Cat. 72-002.

Source: Statistics Canada, Cat. 51-206-XPB and Survey of Employment, Payroll and Hours, Cat. 72-002-XPB

OTHER

The "other" public passenger transit employment figures shown in Table 7-9 refer to personnel employed by public transit companies not included in the Statistics Canada bus surveys referred to earlier in this section,[17] as well as people directly employed by services incidental to the bus industry. A significant drop in employment was noted between 1990 and 1995. Since then, however, the number of jobs has slowly increased. Based on the first six months of available data, there was a seven per cent increase in employment in 1999 from 1998.

The number of personnel employed in "other transportation" jobs has been steadily decreasing since 1990.[18]

The number of people employed by the "pipeline transportation" sector has also been slowly decreasing since 1990, with a further 2.5 per cent decline during 1999. A number of these jobs are probably associated with the development and maintenance of the pipeline infrastructure, and as such should be reported in the following section. It is impossible, however, with any level of accuracy, to disaggregate the numbers to that level of detail.

TABLE 7-9: OTHER DIRECT TRANSPORT-RELATED EMPLOYMENT

	1990	*1995*	*1996*	*1997*	*1998*	*1999*
"Other" Public Passenger Transit	22,894	15,634	18,321	16,666	17,216	18,424[1]
"Other" Transportation	56,022	45,785	39,562	39,514	38,687	38,440[1]
Pipeline Transportation	8,967	7,885	7,005	7,027	6,590	6,419
Total	**87,883**	**69,304**	**64,888**	**63,207**	**62,493**	**63,283**

Source: Statistics Canada, Survey of Employment, Payroll and Hours, Cat. 72-002-XPB

DATA GAPS

A number of data gaps exist in transport services. In air, no employment data is captured for Level V and VI carriers, or private and general aviation activity. There are no numbers available for jobs in Canada related to foreign carriers operating to/from this country. In the marine area, there are no figures associated with shipping conferences operating in Canada.

TRANSPORT INFRASTRUCTURE

This section refers to personnel employed at harbours, airports, ports and other transport-related facilities. It also includes personnel dedicated entirely to the construction and maintenance of transport infrastructure, such as rail right-of-way, roads and highways.

RAIL

The number of road maintenance workers employed by both Class I and Class II rail carriers decreased by 33 per cent since 1990. If the estimated number of managerial and administration staff are included, employees dedicated to rail infrastructure declined by 34 per cent for Class I carriers and 32 per cent for Class II carriers.

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[16] Data for 1999 are not available at this level of disaggregation.

[17] Intercity, school, charter and other, shuttle and urban transit bus companies, with annual operating revenues greater than $2 million.

[18] The number of taxi and limousine drivers discussed earlier has been subtracted from the total number of "other" transportation jobs recorded by Statistics Canada's Survey of Employment, Payrolls and Hours.

Table 7-10 compares the number of people employed in rail infrastructure services by Class I and II rail carriers between 1990 and 1998.

TABLE 7-10: EMPLOYMENT IN RAIL INFRASTRUCTURE SERVICES

	Total Rail[1]	*Infrastructure Services*	*Per cent of total*[2]	*Class I*	*Class II*
1990					
General[3]		2,875		2,499	376
Road maintenance		15,712		13,456	2,256
Total	69,119	18,587	26.9	15,955	2,632
1995					
General[3]		2,274		1,999	275
Road maintenance		11,555		9,999	1,556
Total	51,754	13,829	26.7	11,998	1,831
1996					
General[3]		2,041		1,782	259
Road maintenance		10,892		9,392	1,500
Total	48,038	12,933	26.9	11,174	1,759
1997					
General[3]		1,964		1,726	238
Road maintenance		10,571		9,064	1,507
Total	46,493	12,535	27.0	10,790	1,745
1998					
General[3]		2,049		1,825	224
Road maintenance		10,517		9,010	1,507
Total	44,979	12,566	27.9	10,835	1,731

1 Total Rail employment limited to carrier personnel, does not include incidental services.
2 Total employment by infrastructure services as a percentage of total rail carrier employment.
3 Estimated number of management and administrative personnel allocated to rail infrastructure development and maintenance.

Source: Statistics Canada, Cat. 53-216; Transport Canada

HIGHWAYS

There is no definitive source for determining the number of people employed in the construction and maintenance of highways in Canada. In addition, this is an industry influenced by economic and seasonal factors among others. The employment data in this report are derived from census data for the industry classification "Highways and Heavy Construction." Actual data was available for 1986, 1991 and 1996. Estimates for intervening years are derived from average annual growth between 1991 and 1996.

There were 68,820 people employed under this classification in 1996. On the assumption that post 1996 employment grew at the same rate as government expenditures on road construction and maintenance (0.3 per cent) between 1996 and 1999, there were an estimated 69,026 people employed under this category in 1999.

MARINE

Ports

There were 921 full-time personnel employed by the Canadian Port Authorities[19] (CPA) in 1999, compared with 879 by the same group of ports in 1998. The number of part-time workers remained stable, whereas the number of contract workers increased from 56 in 1998 to 85 in 1999.

Table 7-11 shows total employment, by category, by the Port Authorities in 1998 and 1999.

TABLE 7-11: EMPLOYMENT BY CANADIAN PORT AUTHORITIES, 1998 and 1999

	Year	*Management*	*Administration*	*Other*	*Total*
Total employees	**1999**	215	346	694	1,255
	1998	219	315	647	1,238
Full-time	**1999**	208	303	411	921
	1998	209	265	405	879
Part-time	**1999**	1	34	214	249
	1998	5	39	202	246
Contract	**1999**	6	9	69	85
	1998	5	11	40	56

Note: Totals do not equal sum of parts, as some ports did not provide detailed breakouts.

Source: Canadian Port Authorities

Employment numbers in the summary table (Table 7-1) at the beginning of this chapter include employment data for Canadian Ports Corporation (CPC) facilities for the period 1990 to 1997. As such, the time-series does not refer to the same set of ports. It is, however, a good indicator of the number of full-time personnel at Canada's major ports over the reference period.

St. Lawrence Seaway Management Corporation

The number of full-time positions at the St. Lawrence Seaway Management Corporation (SLSMC) decreased by 8 per cent in 1999, as compared with the number of employees reported by its predecessor, the St. Lawrence Seaway Authority (SLSA), in December 1998. Decreases occurred in all categories, with the largest proportional decrease (27 per cent) in management. The numbers of administration and operations staff each decreased by less than 10 per cent.

Table 7-12 summarizes total employment levels at the SLSMC and SLSA between 1995 and 1999.

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[19] Fraser River, Halifax, Hamilton, Montreal, Nanaimo, North Fraser, Port Alberni, Prince Rupert, Quebec City, Saguenay, Saint John, Sept-Îles, St. John's, Thunder Bay, Toronto, Trois-Rivières, Vancouver, Windsor.

TABLE 7-12: EMPLOYMENT BY CATEGORY, ST. LAWRENCE SEAWAY MANAGEMENT CORPORATION, 1995 – 1999

	1995[1]	*1996*	*1997*	*1998*[2]	1999[3]
Management	N/A	13	12	15	11
Administration	N/A	86	84	70	65
Operations	N/A	611	591	540	498
Total	**739**	**710**	**687**	**625**	**574**
Temporary	N/A	34	49	33	49

1 Number of permanent positions as of March, 1995.
2 As of December 31, 1998 — St. Lawrence Seaway Authority.
3 As of September, 1999 — St. Lawrence Seaway Management Corporation.

Source: St. Lawrence Seaway Management Corporation

AIR

In 1999, there were an estimated 2,547 full-time people employed at Canadian Airport Authorities (CAAs) and Local Airport Authorities (LAAs) in the National Airport System (NAS). There were also 292 Transport Canada employees in transit to CAAs.[20] Combined, the 2,839 people working at NAS airports accounted for an estimated 12 per cent increase over the number of employees reported in 1998. NAS airports handled over 90 per cent of the passenger activity at Canada's airports in 1999.

Table 7-13 shows available employment data for Canada's NAS airports in 1999.

TABLE 7-13: EMPLOYMENT – NAS AIRPORTS, 1999

	CAA/LAA	*Transport Canada Employees In-transit to NAS Airports*	*Total*
Atlantic[1]	135	206	341
Central[2]	1,511	60	1,571
Western[3]	855	26	881
Territories[4]	46	0	46
Total	2,547	292	2,839

1 Atlantic: Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick.
2 Central: Ontario, Quebec.
3 Western: Manitoba, Saskatchewan, Alberta, British Columbia.
4 Territories: Yukon, Nunavut, Northwest Territories.

Source: CAAs, LAAs, Transport Canada

DATA GAPS IN TRANSPORTATION INFRASTRUCTURE

Numerous gaps exist in the reporting of transportation infrastructure data. Some employment figures are not captured or are impossible to break out from more aggregate information. With airports, for example, employment at non-NAS facilities is not identified. In the case of ports, this report includes only full-time employment at Canadian Port Authorities, thereby excluding all personnel employed by non-port authorities and private firms. Various other jobs related to marine infrastructure, such as dredging, construction and maintenance of piers, berths and terminals, are not specifically addressed in this section. Finally, the employment figures reported for construction and maintenance of highways may be high, as it is impossible to break out the number of workers employed in heavy construction.

GOVERNMENT SERVICES TIED TO TRANSPORTATION

FEDERAL GOVERNMENT SERVICES

In 1999/2000, five federal departments and agencies have planned to devote 8,297 full-time employees to transportation.[21] This was a 1.6 per cent decrease from planned levels in 1998/99. These numbers do not include positions primarily concerned with transportation in other departments and agencies, such as Revenue Canada/Customs and Immigration, the federal police, Agriculture Canada, Heritage Canada and the National Capital Commission, for example. While some departments and agencies have some transport-related functions, the employment figures are not captured at a level of detail that allow identification of the associated jobs.

Table 7-14 shows planned full-time equivalents[22] in federal departments and agencies that deal directly with transportation.

TABLE 7-14: PLANNED FULL-TIME EQUIVALENTS FEDERAL DEPARTMENTS AND AGENCIES

	1990/91	*1995/96*	*1996/97*	*1997/98*	*1998/99*	*1999/00*
Transport Canada	19,857	18,388	12,257	4,840	4,480	4,204
Canadian Coast Guard[1]				3,731	3,468	3,602
Transportation Safety Board	300	300	255	223	229	234
Canadian Transportation Agency	491	447	356	260	249	249
Civil Aviation Tribunal	6	8	8	8	8	8
Total	**20,654**	**19,143**	**12,876**	**9,062**	**8,434**	**8,297**

1 Included with Transport Canada until 1997/98.

Source: 1990-2000 Estimates, Federal Government Main Estimates

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[20] There are a number of non-CAA/LAA facilities for which employment data is not available.

[21] Transport Canada, Canadian Coast Guard/DFO, Transportation Safety Board, Canadian Transportation Agency, Civil Aviation Tribunal.

[22] The number of full-time positions, which does not necessarily directly equate to the number of people in the positions.

PROVINCIAL AND TERRITORIAL GOVERNMENT SERVICES

Estimates indicate that employment related to transportation services in the provinces and territories has been slowly decreasing. Although it has not been possible to get an exact breakout for these services, estimates have been included in the summary tables for government services related to transportation. No attempt was made to estimate transport-related functions such as highway policing, safety or regulatory services provided by the provincial governments, or other activities such as truck inspection and highway patrol services.

MUNICIPAL GOVERNMENT SERVICES

A large number of people are associated with transportation services at the municipal level. For example, personnel doing snow removal, street construction and maintenance, street cleaning, parking control and traffic-related policing all fall into this category. However, it was not possible to develop a comprehensive picture of these employees across Canada for this report.

ASSOCIATED SERVICES

Estimates of employment in the transportation sector would be incomplete without including the number of people employed in the many other services directly associated with transportation. These include services related to "sales," such as travel agents, tour operators and third-party service providers (e.g. intermodal marketing companies, load brokers, logistics, freight forwarders, customs, brokers, etc.). There are also a number of services related to operations, such as air, rail and marine control, marine pilotage, food catering, marine bunkering and towing, and maintenance of equipment and insurance. Associated administrative support also accounts for a large number of jobs. Finally, there are numerous modal associations and unions (RAC, ATAC, CBA, CTA, etc.) that have administrative and other staff functions.

Due to data limitations, this section specifically addresses only the four-pilotage authorities, longshoremen working for the two maritime employers associations, and full-time employees at travel agencies, tour operators and tour wholesalers and operators.

MARINE

Pilotage Services

The number of personnel employed by Canada's four pilotage authorities has remained relatively stable since 1995. In 1999, the number of employees increased by 1.6 per cent, with the Laurentian Authority responsible for the entire increase.

Pilots made up over 75 per cent of all personnel in 1999; this is a slight increase from proportions observed in previous years (72 to 74 per cent). The Laurentian Authority accounted for 45 per cent of all pilots in Canada; the Pacific, Great Lakes and Atlantic authorities employed 28, 15 and 12 per cent, respectively. The number of administration staff has remained relatively stable since 1995.

Table 7-15 shows historical employment trends, by category, for each Pilotage Authority in Canada.

Maritime Employers Associations

The number of personnel associated with both the British Columbia Maritime Employers Association (West Coast) and the Maritime Employers Association (MEA) in Eastern Canada has decreased since 1995. In the case of the MEA, a significant proportion of the decline was due to a 1996 change in the composition of ports that remained members of the organization.

Table 7-15 shows historical employment trends, by category, for the two maritime employers associations in Canada.

TABLE 7-15: MARINE EMPLOYMENT, ASSOCIATED SERVICES, 1995 – 1999

Pilotage Authorities	*1995*	*1996*	*1997*	*1998*	*1999*
Great Lakes Pilotage	76.5	75.5	82	83	83
Atlantic Pilotage	70	73	72	72	72
Laurentian Pilotage	219	214	216	224	233
Pacific Pilotage	171	167	167	167	167
Canada					
Administration	46.5	44.5	44	42	44
Pilots	392	396	403	413	416
Other[1]	98	89	90	91	95
Total	**536.5**	**529.5**	**537**	**546**	**555**
Maritime Employers Association[2]	2,058	1,204	1,285	1,279	1,253
BC Maritime Employers Association[3]	3,953	3,857	3,919	3,604	3,576

[1] "Other" includes dispatch, pilot boat and other unspecified services.

[2] Includes ports of Montreal, Trois-Rivières, Bécancour, Toronto and Hamilton (Quebec City, Halifax, Saint John in 1995).

[3] Includes ports of Vancouver, New Westminster, Prince Rupert, Chemainus, Port Alberni, Victoria, Port Simpson, Stewart and a category "Others".

Source: Canadian Pilotage Authorities, MEA, BCMEA

AIR

Travel Agencies, Tour Operators and Tour Wholesalers and Operators

Travel agencies, tour operators and tour wholesalers and operators employed 31,174 people in 1999. This was a 2.7 per cent increase over 1998 levels and a 15 per cent increase since 1990. Over 39 per cent of these workers were employed in Ontario. Personnel in Quebec, British Columbia and Alberta accounted for 26, 16 and 10 per cent of the total, respectively.

Other Air-Related Associated Services

There are a number of personnel employed by associations related to the air industry. These groups include the Air Transport Association of Canada, the Northern Air Transport Association, the Ultra Light Pilots Association of Canada, Canadian Owners and Pilots Association and the Canadian Seaplane Association of Canada. In addition, carrier and air navigation staffs are represented by a number of unions, with administrative staff. It was not possible to retrieve accurate employment counts for these services for this issue of the report.

AVERAGE SALARIES

OVERVIEW

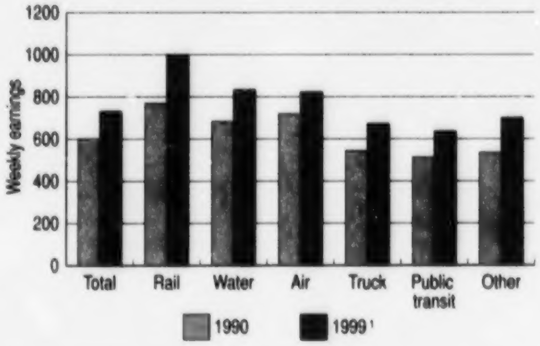
In 1999, average weekly earnings across all modes, including overtime, was $734[23]. This was a small increase (0.7 per cent) over 1998, but equal to the 0.7 per cent increase in the economy as a whole.[24]

Railway employees continue to enjoy the highest average weekly earnings, at $1,005 per week. In contrast, public transit and trucking employees averaged $644 and $669, respectively. If compared with 1998, very little change in average weekly salaries occurred during 1999 in any of the modes.

Employees in the rail industry enjoyed the largest increase (30 per cent) in average weekly earnings between 1990 and 1999. Wages in the air sector had the smallest increase over the same period, at 14 per cent. Average transportation wages in all sectors have increased by 21 per cent since 1990, the same as the economy as a whole.[25]

Figure 7-1 shows average weekly earnings, by mode, for 1990 and 1999.

FIGURE 7-1: AVERAGE WEEKLY EARNINGS, BY MODE



1 Average based on 12 months weighted annual averages.

Source: Statistics Canada, Cat. 72-002

Average weekly earnings for transport-related jobs in 1999 were highest in British Columbia, at $837, followed by Alberta and Manitoba. Workers in New Brunswick and Saskatchewan, at $636 and $641, respectively, had the lowest average weekly incomes. If compared with 1990, workers in Alberta enjoyed the largest percentage increase in average weekly earnings over the last decade (32 per cent), followed by Ontario and Nova Scotia. Average weekly earnings in Quebec increased by 15.4 per cent between 1990 and 1999.

Table 7-16[26] shows the regional distribution of average weekly earnings in the transportation sector for the period 1990 to 1999.

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[23] Two sources have been used for earnings information. Statistics Canada's Survey of Employment, Payrolls and Hours (SEPH) was used for the broad average weekly comparisons between modes. Information from Statistics Canada's Transportation Division mode-specific surveys were used for more detailed breakdowns, by job category, as information at this level of detail is not available from SEPH.

[24] Earnings primarily related to the provision of transport services.

[25] All comparisons are based on current dollar values.

[26] Statistics Canada's Survey on Employment, Payroll and Hours (SEPH) includes earnings for any person drawing pay for services rendered and for paid absences, and for whom the employer must complete a Revenue Canada T-4 Supplementary Form. For example, owner-operators in the trucking industry would not be included.

TABLE 7-16: AVERAGE WEEKLY EARNINGS IN THE TRANSPORTATION SECTOR

(Current dollars)

By Mode[1]:	*1990*	*1995*	*1996*	*1997*	*1998*	*1999*[4]
Total Economy	506	574	586	598	606	610
Total Transport	602	685	695	716	729	734
Rail	770	942	977	999	992	1,005
Water	685	796	813	830	827	837
Air[2]	720	789	803	816	812	825
Truck	544	600	613	638	675	669
Public Transit	510	586	575	625	631	644
Other[3]	535	631	659	690	694	700
By Region[5]:	*1990*	*1995*	*1996*	*1997*	*1998*	*1999*[7]
Nova Scotia	540	N/A[6]	N/A[6]	618	646	683
New Brunswick	547	646	652	647	610	636
Quebec	603	657	657	680	689	696
Ontario	579	691	702	727	740	732
Manitoba	654	676	686	710	700	740
Saskatchewan	N/A[6]	597	615	639	635	641
Alberta	579	665	685	707	728	764
British Columbia	695	777	807	816	849	837

1 Does not include owner-operators, private trucking, delivery services or government employees.
2 Does not include incidental services (jobs that are associated with a particular industry but not defined in Statistics Canada Cat. 72-002).
3 Includes taxis, interurban and other modes.
4 Average based on 12 months weighted annual averages.
5 Comparable information not available for territories, Newfoundland and Prince Edward Island.
6 Data only available for Transportation and Storage.
7 Estimate based on 12 months weighted annual averages.

Source: Statistics Canada, Survey of Employment, Payroll and Hours, Cat. 72-002-XPB

RAIL

Average annual compensation in the rail sector has increased by 38 per cent from 1990 to 1999.[27] Historically, employees directly involved in providing rail transport services have had a significantly higher average compensation than the rail industry average. This differential has been increasing over time; in 1990 it was nine per cent, compared with 12 per cent in 1998.

With the exception of equipment maintenance workers (since 1995),[28] Class I railway employees earn significantly higher salaries than their Class II counterparts. This is particularly evident in the case of the transport services workers. In 1998, Class I workers averaged $16,000 more per year than their Class II peers.

In current dollars, average annual compensation in the rail industry increased by four per cent in 1998 and an additional two per cent in 1999.

Table 7-17, shows average annual compensation in the rail industry in the various job categories for the period 1990 to 1999.

TABLE 7-17: AVERAGE ANNUAL COMPENSATION IN THE RAIL INDUSTRY

(Current dollars)

	Total Rail[1]	*Class I*	*Class II*
1990			
General	44,855	45,745	36,955
Transport services	44,976	45,916	37,946
Equipment maintenance	37,874	38,181	35,131
Road maintenance	37,024	38,433	28,623
Total	41,251		
1995			
General	54,762	55,983	42,800
Transport services	56,573	57,068	52,291
Equipment maintenance	45,795	45,750	46,190
Road maintenance	46,368	47,760	37,422
Total	51,602		
1998			
General	62,565	64,476	42,958
Transport services	62,621	64,587	48,621
Equipment maintenance	46,093	45,724	49,048
Road maintenance	49,741	51,111	41,549
Total	55,972		
1999[2]			
Total	56,959		

1 Total Rail employment limited to carrier personnel.
2 Railway Trends, Railway Association of Canada.

Source: Statistics Canada, Cat. 53-216

TRUCK

Average weekly earnings, by region, in the trucking industry vary considerably across the country. In 1999, the lowest average weekly earnings were in the Atlantic Region and Saskatchewan, with Prince Edward Island and Newfoundland close to 30 per cent below the national average of $669 per week. The highest average weekly earnings were in British Columbia, 20 per cent above the national average. At $688, average weekly earnings in Ontario were almost representative of the national average.

During 1999, average weekly earnings actually decreased in six provinces, leading to an overall decrease in the national average. The largest decline was in New Brunswick (6.9 per cent), followed by Saskatchewan (six per cent) and Ontario (four per cent). Alberta and Nova Scotia both enjoyed substantive increases of 5.7 and 4.3 per cent, respectively.[29]

Table 7-18 shows the regional distribution of average weekly earnings in trucking in Canada.

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[27] Average annual compensation is the gross amount paid to employees, including vacations, holidays, leave of absence with pay, and before deductions for income tax.

[28] The industry went through a significant labour reduction program between 1993 and 1995, including the sale of CN subsidiary AMF Technotransport, which had previously been included in CN's Canadian Rail Operations.

[29] Considering the industry opinion that there is a significant shortage of drivers in the trucking sector, the rather significant drop in average weekly earnings appears unrealistic. Possible causes may be: influx of younger, less-experienced drivers with lower average earnings; seasonal impacts; variation in the commodities hauled/distances covered; or changes in the interpretation or application of the survey results.

TABLE 7-18: AVERAGE WEEKLY EARNINGS IN THE TRUCKING INDUSTRY, 1990 – 1999

(Current dollars)

	1990	*1995*	*1996*	*1997*	*1998*	*1999*[1]
Eastern Canada						
Ontario	572	642	666	678	717	688
Quebec	517	558	553	573	616	613
New Brunswick	403	549	552	577	521	485
Nova Scotia	423	510	505	539	559	583
Newfoundland	434	445	436	516	473	478
Prince Edward Island	393	N/A	465	535	471	464
Western Canada						
British Columbia	628	671	681	725	808	803
Alberta	524	597	628	660	686	725
Saskatchewan	484	529	541	570	588	553
Manitoba	560	562	576	589	619	632
Canada	**544**	**600**	**613**	**638**	**675**	**689**

1 Based on a 12 months weighted average

Source: Statistics Canada, Survey of Employment, Payroll and Hours, Cat. 72-002-XPB

BUS

The average annual salary of employees of large[30] scheduled intercity bus operators was $32,716 in 1998. This was a 6.7 per cent decrease from the average salary reported in 1990 (current dollars). The most significant decrease occurred during 1996, when average salaries dropped by 4.6 per cent from 1995 levels. Average salaries decreased by 3.4 per cent in 1997 and a further 1.5 per cent in 1998.

Large[31] school bus operators reported an average annual salary of $14,784 in 1998, a 21 per cent decrease from 1990. Average salaries increased by 8.6 per cent in 1998, following a 12 per cent decline in 1997. Quebec had the highest average salary for this industry, at $15,582, or 5.4 per cent higher than the national industry average. The average salary in western Canada was $12,368, more than 16 per cent below the Canadian average.

Large[32] charter and other passenger bus companies reported an average annual salary of $20,779 in 1998. The average salary in Ontario, $18,751, was ten per cent lower than the industry average, while in Quebec and western Canada the average salary was ten and six per cent higher, respectively.

Urban transit companies reported an average annual salary of $53,826 in 1998. Urban transit workers in British Columbia and the Territories enjoyed the highest average annual salaries, $60,054, followed closely by workers in Quebec. Salaries in Atlantic Canada were considerably lower than the national average.

Historical comparisons are made difficult by the apparent erratic fluctuations in the average annual salaries reported for the intercity, school and charter bus sectors. These fluctuations can be explained by a number of factors alluded to earlier in the chapter.

Table 7-19 shows the average annual salary in the various sectors of the bus industry.

TABLE 7-19: AVERAGE ANNUAL SALARY IN THE BUS INDUSTRY

(Current dollars)

	1990	*1995*	*1996*	*1997*	*1998*
Intercity	35,050	36,034	34,359	33,204	32,716
School Bus	18,692	14,463	15,474	13,616	14,784
Charter & Other	19,609	23,185	19,652	23,441	20,779
Urban Transit	42,186	50,882	52,275	52,827	53,826[1]

1 Includes part-time workers

Source: Statistics Canada Cat. 53-215

MARINE

Annual labour costs per employee have increased by ten per cent since 1990. For-hire carrier compensation increased by 14 per cent, while that of government carriers increased by seven per cent over the same period. All the increases came at the expense of non-vessel crew members.

Table 7-20 shows the annual labour costs per employee for Canadian-based marine carriers.

TABLE 7-20: ANNUAL LABOUR COSTS PER EMPLOYEE CANADIAN BASED MARINE CARRIERS[1], 1990 – 1998

(Current dollars)

	1990	*1995*	*1996*	*1997*	*1998*[2]
Government	44,429	50,142	45,190	47,545	47,545
For-Hire	42,520	47,925	49,014	48,529	48,529
Total	43,832	49,580	47,130	48,098	48,098

1 Private carrier information included with government carriers

2 Estimates based on 1997 data

Source: Statistics Canada Cat. 54-205

AIR

Average salaries and wages paid to Level I-III air carrier employees increased by 17 per cent between 1990 and 1998. Although labour costs had been steadily increasing until 1997, a slight decrease (0.3 per cent) was noted in 1998. Pilots and copilots and other flight personnel had their average salaries and wages decrease by 2.4 and 1.2 per cent, respectively. Conversely, management and administration employees enjoyed a 4.1 per cent increase. Average annual salaries and wages of other carrier personnel remained stable.

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[30] 1990: carriers with annual revenues greater than $500,000. 1995 – 1998: carriers with annual revenues greater than $2,000,000.

[31] 1990: carriers with annual revenues greater than $500,000. 1995 – 1998: carriers with annual revenues greater than $2,000,000.

[32] 1990: carriers with annual revenues greater than $500,000. 1995 – 1998: carriers with annual revenues greater than $2,000,000.

Average annual salaries and wages paid to Level IV air carrier employees increased by 37 per cent between 1990 and 1998. Preliminary data for 1998 indicates a very slight decrease (0.1 per cent) for this sector compared with 1997.[33] Average salaries and wages paid to Level IV air carrier employees in 1998 were ten per cent lower than those paid to their Level I-III counterparts.

Table 7-21 shows the labour cost of Levels I-V Canadian air carriers.

TABLE 7-21: ANNUAL LABOUR COSTS PER EMPLOYEE OF CANADIAN AIR CARRIERS

(Current dollars)

	1990	*1995*	*1996*	*1997*	*1998*[1]
Levels I - III					
Pilots and Copilots	75,833	77,482	82,341	84,173	82,123
Other Flight Personnel	30,341	35,951	38,061	37,512	37,076
Management and Administration	41,151	48,734	51,072	49,937	51,989
Other Carrier Personnel	37,194	40,132	42,448	42,956	42,982
Total Levels I-III[2]	40,832	45,153	47,789	48,019	47,855
Level IV					
Total Level IV[3]	31,430	42,794	43,700	43,003	42,941
Levels I-IV					
Total Levels I-IV	40,105	44,962	47,429	47,606	47,397

1 Preliminary data.

2 Level I-III: Canadian air carriers that in each of the two calendar years immediately preceding the report year, transported 5,000 revenue passengers or more or 1,000 tonnes of revenue goods or more.

3 Level IV: Canadian air carriers not classified in Levels I-III that, in each of the two calendar years immediately preceding the report year, realized annual gross revenues of less than $500,000 for air services for which the air carrier held a licence.

Source: Statistics Canada, Cat. 53-206-XPB

LABOUR ACTION IN TRANSPORTATION[34]

Number of Work Stoppages

There were 17 labour stoppages recorded in 1999. Eight of these represented labour action in the bus and urban transit sector. There were three stoppages recorded in the rail sector during the fourth quarter of 1999. Air and water transport with one stoppage each, and truck and taxi, with two stoppages each, accounted for the remaining 33 per cent of labour action in the industry.

Overall, Canada has enjoyed a relatively stable labour environment in the transportation industry over the last decade. Between 1990 and 1998, labour stoppages fluctuated between a high of 28 in 1990 and a low of ten in 1996, averaging 18 stoppages per year over the period. The bus and urban transit sector contributed significantly to the higher numbers recorded in 1990 and 1991, and to the overall average.

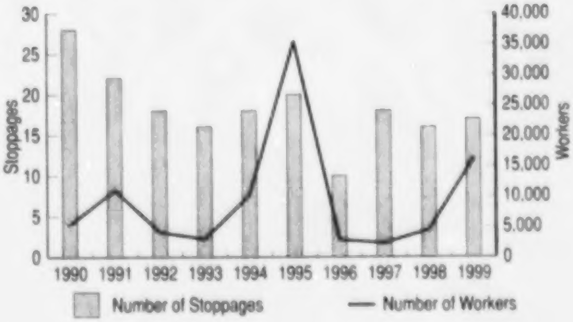
Number of Workers Involved

The number of workers involved in labour stoppages fluctuated between 2,300 and 35,000 between 1990 and 1998, averaging 8,700 per year over the period. While 1990 had the largest number of stoppages, the number of workers involved (5,311) was significantly below the annual average. The number of workers involved in work stoppages peaked in 1995 at 35,252; labour action in the rail sector accounted for 89 per cent of this total.

There were over 16,000 workers involved in stoppages in 1999. The bus and urban transit sector accounted for 58 per cent of this number; water and rail transport accounted, respectively, for 22 per cent and 13 per cent; and air, truck and taxi made up the remaining seven per cent.

Figure 7-2 shows the number of stoppages and workers involved in labour stoppages in the transportation industry over the last decade.

FIGURE 7-2: NUMBER OF WORK STOPPAGES AND WORKERS INVOLVED, 1990 – 1999



Source: Human Resources Development Canada

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33 1999 data was not available at time of writing.

34 Labour action primarily refers to employees associated with the direct provision of transport services.

PERSON-DAYS LOST

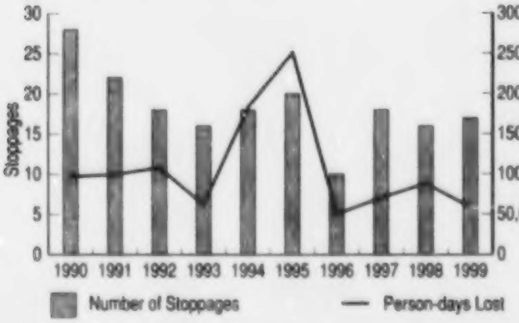
The number of person-days lost due to labour stoppages averaged 112,000 between 1990 and 1998, with a peak of 250,000 in 1995. Rail, with three stoppages that year, accounted for 85 per cent of all person-days lost. The lowest number of losses occurred in 1996 (49,860), with the bus and urban transit sector accounting for 86 per cent of that total.

Over 58,000 person-days were lost due to labour action in 1999. The one labour stoppage in the water transport sector at the Port of Vancouver during the fourth quarter of 1999 was the most significant one in transportation, accounting for over 33 per cent of total person-days lost in transportation in 1999. However the eight stoppages in the bus and urban transit sector accounted for an additional 37 per cent of that number. Work stoppages in the air and rail sector, respectively, accounted for 15 and 12 per cent of person-days lost. Losses in the truck and taxi sectors were negligible in 1999, accounting for only three per cent of transport's person-days lost.

Ontario was, after British Columbia, the most affected province by labour action with 20,030 person-days lost during 1999.[35] Nova Scotia lost 8,500 person-days in 1998 due to urban transit labour action, and British Columbia lost 2,660 person-days in 1999 to similar problems. Newfoundland accounted for 8,520 person-days lost in 1999 due to a labour stoppage in the air transportation sector.

Figure 7-3 compares the number of work stoppages and the associated number of person-days lost in the transportation industry over the last decade.

FIGURE 7-3: LABOUR ACTION, 1990 – 1999



Source: Human Resources Development Canada

Table 7-22 summarizes the number of stoppages, workers involved and person-days lost due to labour action in the transportation industry since 1990.

TABLE 7-22: LABOUR ACTION BY MODE OF TRANSPORT

	1990	*1995*	*1996*	*1997*	*1998*	*1999*
Number of Stoppages						
Air	1	1	1	7	3	1
Rail	3	3	1	0	1	3
Water	6	4	0	4	4	1
Truck	5	3	2	5	4	2
Bus/Urban	11	3	4	1	4	8
Taxi	2	6	2	1	0	2
Total	28	20	10	18	16	17
Workers Involved						
Air	24	65	147	1,177	2,693	265
Rail	1,880	31,540	502	0	25	2,130
Water	408	2,306	0	472	459	3,550
Truck	570	209	100	559	250	860
Bus/Urban	2,385	838	2,031	68	1,006	9,296
Taxi	44	294	49	7	0	24
Total	5,311	35,252	2,829	2,283	4,433	16,125
Person-Days Lost						
Air	1,100	3,420	600	51,420	33,840	8,520
Rail	29,540	211,730	2,150	0	180	7,080
Water	20,160	15,010	0	1,499	10,510	19,620
Truck	14,100	1,000	850	14,220	15,450	1,700
Bus/Urban	31,070	6,000	42,820	2,340	28,150	21,490
Taxi	630	13,260	3,440	850	0	110
Total	96,600	250,420	49,860	70,329	88,130	58,520

Source: Human Resources Development Canada

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[35] 1999: Four urban transit strikes.

TRANSPORTATION AND TRADE

8

Both domestic and international trade continue to have a huge impact on Canadian transportation. Continuing globalization of the world economy will only enhance transportation's vital role in all trade activity.

Transportation is critical to any trade transaction. Canada's open economy needs transportation for shipping commodities to, and receiving them from, other countries, as well as for moving goods within or between provinces. The close link between trade and transportation therefore means that the growth and structure of trade influence not only the growth in transport demand, but also the choice of modes.

This chapter examines Canada's domestic and international trade and its relationship with transportation, primarily for the period of 1992–1998. Domestic trade is looked at in terms of goods and services[1] moved within and between provinces.[2] International trade with the US and other countries is examined both in terms of composition of goods and services carried, and in modal choice. This chapter will explore how trade has a direct influence on the type of transportation used.

DOMESTIC TRADE

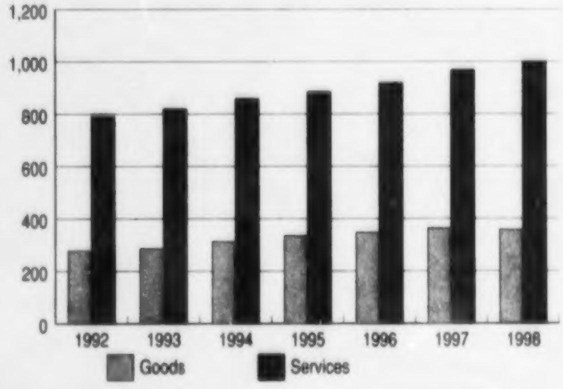
From 1992 to 1998, the value of domestic trade (goods and services) rose from $1,071 billion to $1,354 billion (in current dollars). This implies that, after the recession of the early 1990s, the value of domestic trade increased at an average annual rate of four per cent over this period. In constant (1992) dollars, however, this annual average growth is reduced to 2.7 per cent. As explained later in this chapter, this growth in domestic trade is modest when compared with that of external trade over the same period.

Intraprovincial trade flows dominated domestic trade, in a ratio that remained relatively constant over the 1992–1998 period, with intraprovincial trade at 87 per cent of total domestic trade and interprovincial at 13 per cent. In terms of goods and services, the share of domestic trade for services was constant at 74 per cent, while that for goods levelled at 26 per cent.

Figures 8-1 and 8-2 show Canada's domestic trade by type and sector from 1992 to 1998.

FIGURE 8-1: DOMESTIC TRADE BY TYPE, 1992 – 1998

(Billions of dollars)



Source: Statistics Canada, Input-Output Division.

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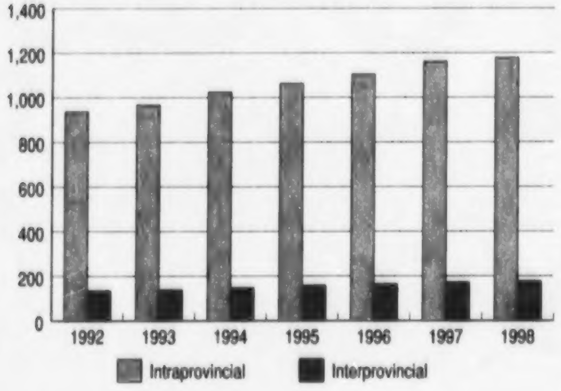
[1] "Goods" consist of primary and manufactured products. "Services" refer to activities such as transportation and storage, communication services, wholesale and retail trade services, finance, insurance and real estate services, business and personal, and miscellaneous services.

[2] Interprovincial trade flows are estimated using the provincial National Accounts Information System, which is based on inputs and outputs. Statistics Canada recently issued a new time series up to 1998, but this does not include a modal breakdown of the provincial trade flows.

FIGURE 8-2: DOMESTIC TRADE BY SECTOR, 1992 – 1998

(Billions of dollars)



Source: Statistics Canada, Input-Output Division

COMPOSITION OF TRADE

Goods and services generate different needs in transportation. From 1992 to 1998, the value of services traded rose from $792 billion to $996 billion, a 3.9 per cent average growth. Over 90 per cent of services were traded intraprovincially. In 1998, major domestic services were related to business and finance ($206 billion), the government sector ($190 billion), wholesale and retail trade ($125 billion), construction ($106 billion) and transportation ($66 billion).

The value of goods traded domestically rose from $278 billion to $358 billion, representing an average annual growth of 4.3 per cent. Fabricated materials and manufactured goods represented nearly 80 per cent of total domestic trade, while primary goods and crude materials accounted for the rest. Over 70 per cent of total domestic trade in goods was intraprovincial.

TABLE 8-1: DOMESTIC TRADE BY SECTOR, 1998

(Billions of dollars)

	Goods	*Services*	*Total*	*Goods' Share (per cent)*	*Services' Share (per cent)*
Sectors					
Intraprovincial	255.4	922.0	1,177.4	22	78
Interprovincial	102.2	74.4	176.6	58	42
Total	357.6	996.4	1,354.0	26	74

Source: Transport Canada, adapted from Statistics Canada, Input-Output Division

Table 8-1 presents the value of domestic trade by sector and type of commodity for 1998.

TRANSPORTATION BY MODE

From 1992 to 1998, the volume carried by various modes increased by an average of three per cent, from 362 million to 429 million tonnes. Rail accounted for the greatest share, oscillating between 46 and 50 per cent of total tonnage moved. For-hire trucking[3] followed closely, increasing its share from 34 per cent to 41 per cent. Marine's share declined slightly, from 14 to 11 per cent. Air carried less than one per cent.

Table 8-2 shows that in 1998, 429 million tonnes were moved within domestic borders. Rail and marine realized over 70 per cent of their activity in the shipping of primary goods and crude materials, while for-hire trucking realized about the same but in manufactured goods and fabricated materials. Container shipping accounted for less than one per cent of domestic marine tonnage and seven per cent of that for domestic rail.

TABLE 8-2: DOMESTIC TRANSPORTATION FLOWS,[1] 1998

(Millions of tonnes)

	Rail	*Marine*	*For-hire Truck*	*Air*	*Total*
Primary Products					
Grains	26.0	5.2	4.7		35.9
Forest Products	19.6	8.7	27.5		55.8
Metallic Ores	49.2	7.1	1.3		57.6
Non-metallic Minerals	21.5	10.7	13.8		46.0
Minerals Fuels	38.8	1.7	5.2		45.7
Total:	155.1	33.4	52.5		241.0
Manufactured Products	47.3	14.9	125.3	0.5	188.0
Total all Products	202.4	48.3	177.8	0.5	429.0

[1] Traffic flows take into account movements of shipments, i.e. either loadings or unloadings (no double counting).

Source: Transport Canada, adapted from various Statistics Canada publications

The trucking share would be higher if traffic activities of small for-hire carriers, private trucking carriers and owner-operators could be taken into account.[4]

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[3] For-hire trucking includes Class I and II carriers earning annual intercity revenues of $1 million and more, as defined by Statistics Canada in the "Quarterly For-Hire Trucking (Commodity Origin/Destination) Survey." Courier and messenger service, private carrier and owner-operator activities are excluded from the Survey.

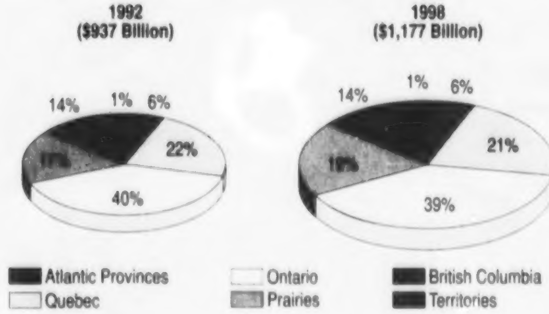
[4] Starting with 1997, methodological changes were introduced by Statistics Canada in its trucking surveys to be in accordance with the new North American Industrial Classification System (NAICS). As result, the for-hire carriers with annual revenues of $1 million and more that had more than 50 per cent of their business revenues driven by local movements (less than 80 km) are no longer surveyed.

INTRAPROVINCIAL TRADE

From 1992 to 1998, intraprovincial trade grew from $937 billion to $1,177 billion at an annual average increase of 3.9 per cent. As mentioned previously, trade in services dominated each province's intraprovincial trade, averaging 78 per cent of the total.

Figure 8-3 shows that shares did not change significantly over the period. Ontario remained the key intraprovincial trading province, with close to 40 per cent of Canada's total intraprovincial trade. Quebec was second with a 22 per cent share, followed in order by the Prairie provinces at 19 per cent (led by Alberta), British Columbia at 14 per cent, the Atlantic provinces at six per cent and the territories at one per cent.

FIGURE 8-3: INTRAPROVINCIAL TRADE BY PROVINCE, 1992 and 1998



Source: Statistics Canada, Input-Output Division

Although less than services, the value of goods traded within each province rose from $199 billion to $255 billion.

Table 8-3 shows that, in terms of tonnage, for-hire trucking and rail filled the freight transport demand generated by intraprovincial trade in 1998. Trucking's share is probably larger than indicated here, as data on private carriers, owner-operators and small for-hire carriers were not available.

INTERPROVINCIAL TRADE

Although interprovincial trade is a small component of domestic trade, it is important because it shows economic interactions between provinces and indicates changes.

TABLE 8-3: DOMESTIC TRANSPORTATION FLOWS,[1] BY SECTOR AND MODE, 1998

(Millions of tonnes)

	Rail	*Marine*	*For-hire Truck*	*Air*	*Total*
Sectors					
Intraprovincial	86.0	29.3	130.7	N/A	246.0
Interprovincial	116.4	19.0	47.1	N/A	182.5
Total:	202.4	48.3	177.8	0.5	429.0

[1] Traffic flows take into account movements of shipments, i.e. either loadings or unloadings (no double counting).

Source: Transport Canada, adapted from various Statistics Canada data

From 1992 to 1998, interprovincial trade grew from $134 billion to $177 billion at an average annual increase of 4.7 per cent. As opposed to intraprovincial trade, goods dominated with nearly 60 per cent of the total, with services having 40 per cent.

In 1998, major services traded between provinces were finance and business ($22 billion), trade wholesale and retail ($21 billion) and transportation ($14 billion). In the same year, the value of goods moved between provinces was estimated at $102 billion. Close to 13 per cent of these were primary or crude products (e.g. mineral fuels). Major traded commodities were food products ($21 billion), machinery and equipment ($17 billion) and mineral fuels ($12 billion). As shown in Table 8-3, rail and for-hire trucking were the main modes used to move goods between provinces in 1998.

MAIN EAST–WEST ROUTES

Table 8-4 shows the main interprovincial trade markets and underlines the strong trade linkages between neighbouring provinces.

In 1998, six two-way interprovincial trade flows, each with over $10 billion of trade, represented over 70 per cent of total interprovincial trade. Five of these two-way trade flows had Ontario as the originating province. The most important interprovincial trade flows involved Quebec and Ontario and totalled $51 billion, including $29 billion from Ontario to Quebec. This two-way route represented 29 per cent of total interprovincial trade.

Other main interprovincial two-way routes were Ontario–Alberta, valued at $22 billion, or 12 per cent of total interprovincial trade, followed by Ontario–British Columbia ($15 billion, or eight per cent), and Ontario–Manitoba/Saskatchewan ($14 billion, or eight per cent). These share proportions were stable over the 1992–1998 period.

TABLE 8-4: INTERPROVINCIAL TRADE[1], MAIN EAST–WEST ROUTES, 1998

(Billions of dollars)

Routes (from/to)	*Trade Value*	*Total two-way*	*Share in per cent*
Ontario/Quebec	29.1	51.1	29
Quebec/Ontario	22.0		
Ontario/Alberta	12.9	21.7	12
Alberta/Ontario	8.8		
Ontario/British Columbia	11.0	14.8	8
British Columbia/Ontario	3.8		
Ontario/Manitoba & Saskatchewan	8.6	13.8	8
Manitoba and Saskatchewan/Ontario	5.2		
Ontario/Atlantic Provinces	10.1	13.2	7
Atlantic Provinces/Ontario	3.1		
Alberta/British Columbia	6.5	12.0	7
British Columbia/Alberta	5.5		
Quebec/Atlantic Provinces	5.5	9.1	5
Atlantic provinces/Quebec	3.6		
Alberta/Manitoba and Saskatchewan	5.2	8.9	5
Manitoba and Saskatchewan/Alberta	3.7		
Quebec/Alberta	3.9	6.6	4
Alberta/Quebec	2.7		
Quebec/British Columbia	3.8	5.7	3
British Columbia/Quebec	1.9		
Sub-Total:		156.9	89
Other Routes		19.7	11
Total Interprovincial Trade		176.6	100

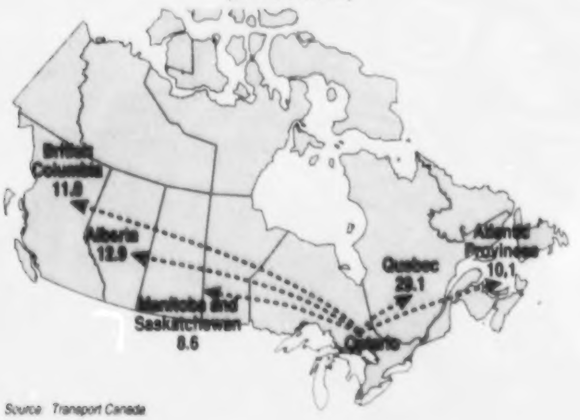
[1] No double counting as the exports of one province are the imports of another. Interprovincial trade includes value of goods and services.

Source: Transport Canada, adapted from Statistics Canada, Input-Output Division

Figures 8-4 and 8-5 show primary interprovincial trade flows in 1998.

FIGURE 8-4: INTERPROVINCIAL TRADE MAIN TRADE FLOWS, ONTARIO AS ORIGIN, 1998

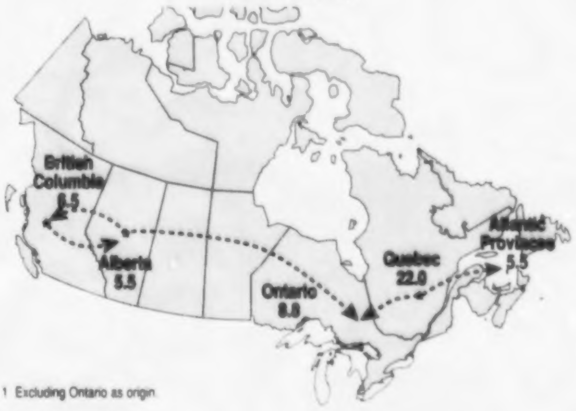
(Billions of dollars)



Source: Transport Canada

FIGURE 8-5: INTERPROVINCIAL TRADE MAIN TRADE FLOWS, OTHER REGIONS[1] AS ORIGIN, 1998

(Billions of dollars)



[1] Excluding Ontario as origin

Source: Transport Canada

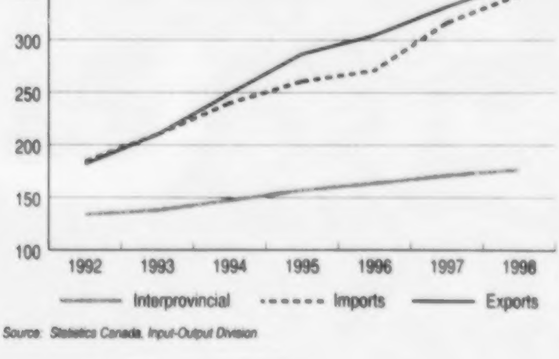
INTERNATIONAL TRADE

Trade flows are one of many ways to illustrate interactions between Canada and other countries. Comparing east–west interprovincial trade flows with north–south international trade flows reveals the increasing importance of outside markets to the provincial economies.

From 1992 to 1998, international exports and imports grew at an average annual rate of 11.9 per cent and 10.9 per cent, respectively. Interprovincial trade, on the other hand, grew at a more modest rate of 4.7 per cent. International exports and imports almost doubled, with exports rising from $181 billion to $356 billion, and imports jumping from $184 billion to $343 billion.

FIGURE 8-6: TRENDS – INTERPROVINCIAL TRADE VS EXPORTS AND IMPORTS, 1992 – 1998

(Billions of dollars)



Source: Statistics Canada, Input-Output Division

Figure 8-6 shows trends in interprovincial trade versus exports and imports from 1992 to 1998.

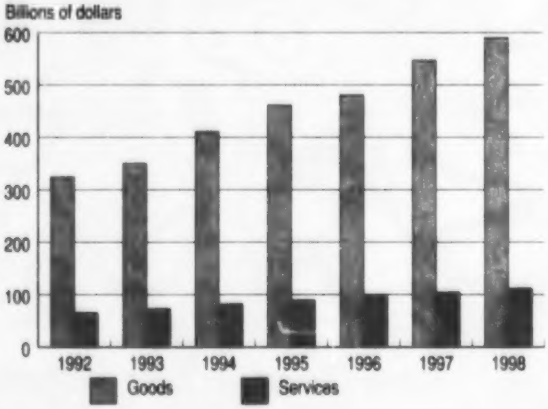
COMPOSITION OF IMPORTS AND EXPORTS

From 1992 to 1998, goods dominated international exports and imports, with a share over services ranging from 82 to 84 per cent. In 1998, goods traded by Canada at the international level were estimated at $590 billion, while services were valued at $110 billion.

Main services traded by provinces at the international level were business and finance ($41 billion), transportation ($28 billion), trade wholesaling ($13 billion), and personal/miscellaneous services ($13 billion). Goods were concentrated into manufactured products and fabricated materials, totalling nearly 90 per cent of the total. The share of primary goods fell from 11 to eight per cent over this period.

Figure 8-7 shows Canada's external trade by type from 1992 to 1998.

FIGURE 8-7: INTERNATIONAL TRADE BY TYPE, 1992 – 1998



Source: Statistics Canada, Input-Output Division

TRADE FLOWS AND MODAL CHOICE

To examine the relation between trade flows and the choice of modes, the trade flows of goods will be explored in two ways: Canada's trade with the US and Canada's trade with other countries.

CANADA–US TRADE

IMPACT OF CANADA–US TRADE

Canada's trade with the US has been a driving force in the overall performance of its economy and trade activities. From 1992 to 1998, the share of exports to the US rose from 77 to 85 per cent of Canada's total exports. At the same time, the share of imports from the US increased from 65 to 68 per cent of Canada's total imports from all countries.

From 1992 to 1998, exports to the US soared from $126 billion to $270 billion, an annual growth rate of 13.6 per cent. At 4.6 per cent, the average growth of exports to countries other than the US was more modest, a situation partially explained by the Asian and Latin American currency crises and a recession that took a heavy toll on the economies in these regions during 1998.

Imports from the US grew by an average annual rate of 13.3 per cent, jumping from $96 billion to $204 billion. As for imports from countries other than the US, the average growth rate reached 10.7 per cent.

MODAL SPLIT

Trucking and rail were the main modes of transportation for transborder trade.[5] In 1998, the trucking mode dominated Canada's trade with the US, at 63 per cent of exports and 80 per cent of imports. This was followed by rail, at 21 per cent of exports and nine per cent of imports. The pipeline mode (included in "Other" mode) ranked third in carrying exports to the US, while air took second place in imports.

From 1992 to 1998, the trucking and air modes registered a slight increase in their shares (mainly in exports), while rail and marine experienced a decline, both growing at a slower pace than trucking and air.

Table 8-5 shows Canada's exports to and imports from the US by mode and sector.

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[5] More than one mode of transportation might be used to carry traded goods from origin to destination. For *exports*, the mode of transportation indicates the mode by which the international boundary is crossed. For *imports*, the mode of transportation represents the last mode by which the cargo was transported to the port of clearance in Canada. This may not be the mode by which the cargo arrived at the Canadian port of entry in the case of inland clearance. This may lead to some underestimation of Canadian imports by the marine and air modes.

TABLE 8-5: CANADA–US TRADE BY MODE AND SECTOR, 1992 – 1998

	Billions of dollars	------------------- Share in per cent				-------------------
Year	***EXPORTS***[1]	*Road*	*Rail*	*Marine*	*Air*	*Other*
1992	125.7	57.9	23.6	2.9	4.8	10.8
1993	150.7	57.6	24.4	2.9	4.5	10.6
1994	183.3	57.9	24.6	2.7	4.9	9.9
1995	207.8	57.5	25.1	3.3	4.7	9.4
1996	223.2	59.0	22.6	3.1	4.5	10.8
1997	245.1	59.5	22.4	2.7	5.0	10.4
1998	269.9	62.7	20.8	2.3	5.2	9.0
	IMPORTS	*Road*	*Rail*	*Marine*	*Air*	*Other*
1992	96.5	80.8	8.7	1.8	8.3	0.4
1993	113.8	81.9	8.5	1.6	7.5	0.5
1994	137.3	81.1	9.4	1.4	7.7	0.4
1995	150.7	80.1	9.5	1.5	8.6	0.3
1996	156.9	79.9	8.8	1.5	9.2	0.5
1997	184.3	79.2	9.6	1.5	9.2	0.6
1998	203.6	80.0	8.6	1.5	9.2	0.7

1 Total exports including domestic exports and re-exports.

Source: Statistics Canada, Cat. 65-202 and 65-203; special tabulations

CANADA–US TRADE BY REGION

In 1998, four provinces captured 93 per cent of Canada's trade with the US. Ontario dominated with 65 per cent of transborder trade, accounting for $158 billion in exports and $148 billion in imports. Quebec was next with 14 per cent, accounting for $48 billion in exports and $20 billion in imports. Alberta and British Columbia followed with seven per cent and six per cent, respectively. All Canadian provinces, except Manitoba and the Yukon Territory, registered a positive balance, as their exports to the US exceeded their imports.

TABLE 8-6:CANADA–US TRADE[1] BY PROVINCE, 1988 and 1998

(Billions of dollars)

			Share in per cent	
	1988	*1998*	*1988*	*1998*
Ontario	119.6	306.6	64.2	64.8
Quebec	28.1	67.9	15.1	14.3
Alberta	12.5	34.1	6.7	7.2
British Columbia	12.7	29.6	6.8	6.3
Manitoba	4.2	13.6	2.2	2.9
Saskatchewan	3.2	9.5	1.7	2.0
New Brunswick	2.8	6.4	1.5	1.4
Nova Scotia	1.8	3.4	1.0	0.7
Newfoundland	1.4	1.9	0.7	0.4
Prince Edward Island	0.1	0.4	0.1	0.1
Yukon	0.0	0.0	0.0	0.0
Northwest Territories	0.0	0.0	0.0	0.0
TOTAL:	**186.3**	**473.5**	**100.0**	**100.0**

1 Total exports and imports

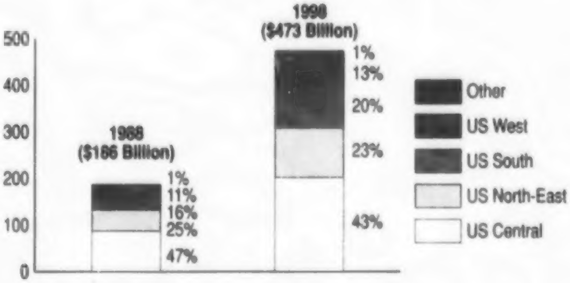
Source: Statistics Canada, Cat. 65-202 and 65-203; Special tabulations

Table 8-6 shows Canada's trade with the US by province in 1988 and 1998. Provinces' shares did not vary significantly between these two years.

In 1998, transborder trade by US region[6] revealed the predominance of the US Central region, which captured 43 per cent of the trade for a total of $202 billion ($113 billion from Canada, and $89 billion to Canada). The US North East region ranked second with $107 billion (23 per cent of the trade), followed by the US South at $94 billion and the US West at $64 billion. All US regions recorded a negative balance with Canada, except the South, which shipped more goods to Canada than it received.

Figure 8-8 shows transborder trade by US region for 1988 and 1998.

FIGURE 8-8: CANADA–US TRADE[1] BY US REGION, 1988 AND 1998



Note: Other e.g. Alaska, Hawaii.
1 Total exports and imports.

Source: Statistics Canada, International Trade Division.

Between 1988 and 1998, two US regions increased their shares of trade with Canada: the South, from 16 per cent to 20 per cent, and the West, from 11 per cent to 13 per cent. As explained later, the increasing importance of US southern and western regions reflects surface modes taking goods over longer distance, farther away from Canadian points.

PREFERRED MODE

As mentioned previously, trucking is the dominant mode in Canada–US trade. From 1991 to 1998, the number of trucks crossing Canada–US border points increased at an average annual rate of 7.9 per cent, from 19,680 units to 33,410 units on a daily basis.[7] Over the same period, the share of daily crossings for trucks of Canadian firms rose from 57 per cent to 66 per cent.

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[6] US regions include US Central, i.e. the states bordering the Great Lakes (Central East) and those of North and South Dakota, Nebraska, Kansas, Iowa, Minnesota and Missouri (Central West); US North East, which refers to the New England and Atlantic states such as New Jersey, New York and Pennsylvania; US South, which includes southern states from the Atlantic coast to the Gulf of Mexico; and US West, which includes US mountain and Pacific states.

[7] Adapted by Transport Canada from Statistics Canada, International Travel data.

Canada-based for-hire trucking carriers have been transporting goods over greater distances. From 1988 to 1998, the average distances by tonne carried rose by an average annual rate of 2.7 per cent for exports (from 791 to 1,037 kilometres) and by an average rate of 2.5 per cent for imports[8] (from 928 to 1,184 kilometres).

MAJOR CANADA–US TRADE FLOWS

In 1998, there were 16 two-way trade flows between Canada and the US worth at least $9 billion each, representing close to 85 per cent of total Canada–US trade. Trucking was the dominant mode of transportation, capturing a 50 per cent share or more in 14 of them.

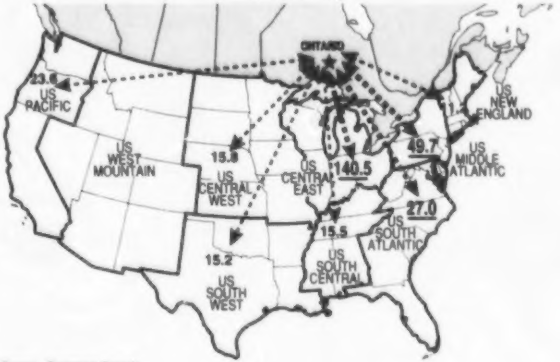
Four trade flows, all involving Ontario, totalled $241 billion, or more than 50 per cent of total transborder trade. The largest was between Ontario and the US states bordering the Great Lakes, which accounted for a 30 per cent share, with exports of $75 billion and imports of $66 billion. The vehicles and parts trade dominated Ontario's exports, mostly to Michigan, valued at $44 billion ($39 billion carried by truck, $14 billion by rail). Likewise, Ontario's imports consisted mainly of the vehicle and parts trade at $26 billion ($22 billion by truck, $4 billion by rail) and of machinery and equipment at $19 billion with truck as the mode of choice.

Table 8-7 illustrates the 16 trade flows, showing the trade balance and modal breakdown for each.

Figures 8-9 and 8-10 illustrate the Canada–US trade flows involving Ontario and other Canadian regions.

FIGURE 8-9: CANADA–US TRADE, MAIN ONTARIO TRADE FLOWS, 1998

(Billions of dollars)



Source: Transport Canada

TABLE 8-7: CANADA–US TRANSBORDER TRADE SHOWING MAIN NORTH-SOUTH TRADE FLOWS, 1998

(Billions of dollars)

Canadian Region	*US Region*	*Exports from Canada*	*Imports to Canada*	*Total trade*	*Share in per cent*	*Main modes used (Per cent of total value)*
Ontario	US Central East	74.6	65.9	140.5	30	Road (82), Rail (16)
Ontario	US Middle Atlantic	29.2	20.5	49.7	10	Road (78), Rail (17)
Ontario	US South Atlantic	11.3	15.7	27.0	6	Road (81), Rail (10)
Ontario	US Pacific	14.3	9.3	23.6	5	Road (54), Air (25)
Quebec	US Middle Atlantic	12.5	4.3	16.8	4	Road (79), Rail (13)
Ontario	US Central West	6.8	9.0	15.8	3	Road (73), Rail (17)
Ontario	US South Central	5.9	9.6	15.5	3	Road (82), Rail (15)
Ontario	US South West	5.8	9.4	15.2	3	Road (71), Rail (19)
British Columbia	US Pacific	8.1	6.6	14.7	3	Road (70), Marine (8)
Quebec	US New England	8.4	5.1	13.5	3	Road (85), Air (6)
Prairies	US Central East	8.6	4.9	13.4	3	Road (42), Pipeline (35)
Quebec	US Central East	9.7	2.1	11.9	3	Road (57), Rail (30)
Prairies	US Central West	7.9	3.7	11.7	2	Road (53), Pipeline (31)
Ontario	US New England	6.0	5.2	11.2	2	Road (78), Air (14)
Quebec	US South Atlantic	6.4	2.8	9.2	2	Road (61), Air (21)
Prairies	US Pacific	6.9	2.2	9.1	2	Road (41), Pipeline (33)
Sub-Total:		**222.5**	**176.3**	**398.8**	**84**	
Other		47.4	27.3	74.7	16	
Total Canada/US trade:		**269.9**	**203.6**	**473.5**	**100**	

US Central includes the states bordering the Great Lakes (Central East) and those of North Dakota, South Dakota, Nebraska, Kansas, Iowa, Minnesota and Missouri (Central West);
US NorthEast refers to New England states and Middle Atlantic states such as New Jersey, New York, and Pennsylvania;
US South includes southern states from the Atlantic coast to the Gulf of Mexico; and
US West refers to US mountain states and Pacific states.

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

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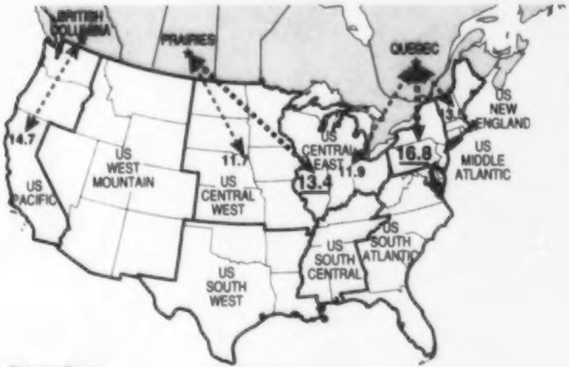
[8] Based on Statistics Canada, For-hire Trucking (Commodity Origin/Destination) Survey.

FIGURE 8-10: CANADA–US TRADE, MAIN CANADIAN REGIONS' TRADE FLOWS, 1998

(Billions of dollars)



1 Excluding Ontario

Source: Transport Canada

STRENGTH OF CANADA–US TRADE

Internal and external factors have contributed to the increase in Canada's trade with the US. Among these are dollar exchange rates and the gradual reduction of tariffs on goods as a result of trade agreements.

From 1988 to 1998, the share of duties collected on total goods imported from the US decreased steadily, from 2.6 per cent to 0.2 per cent. Table 8-8 shows the share of duties collected on selected imported goods from the US.

TABLE 8-8: CANADA–US TRADE, SHARE OF DUTIES ON GOODS IMPORTED FROM THE US FOR SELECTED YEARS FROM 1988 TO 1998

(Per cent¹)

	1988	*1992*	*1995*	*1998*
Total Goods	2.6	1.8	0.7	0.2
Selected goods:				
Vehicle and Parts	0.3	0.3	0.2	0.0
Machinery and Equipment	2.1	0.8	0.3	0.0
Electrical Machinery	3.2	1.7	0.7	0.1
Household	8.8	3.9	1.2	0.1
Paper and Other Products	5.9	1.9	0.2	0.0
Chemical Products	4.9	2.0	0.4	0.1
Plastic and Rubber Products	6.6	3.5	1.4	0.1
Iron and Steel Products	5.1	3.3	1.6	0.1
Non-metallic Products	4.2	2.4	0.9	0.1
Non-ferrous Products	3.2	1.7	0.6	0.0
Dairy Products	5.9	3.5	1.9	0.2

1 Ratio of duties collected to total value of imported goods.

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

With exports, the currency exchange rate made Canadian goods relatively less expensive to American consumers. Table 8-9 shows the exchange rate evolution in recent years.

TABLE 8-9: EXCHANGE RATES, CANADIAN DOLLARS PER SELECTED UNIT

	US Dollar	*British Pound*	*German Mark*	*Japan Yen ('000s)*
1989	1.184	1.941	0.631	8.60
1993	1.290	1.938	0.781	11.65
1995	1.372	2.166	0.959	14.68
1997	1.385	2.268	0.799	11.45
1999	1.486	2.404	0.811	13.11

Source: Statistics Canada, Cat. 11-010

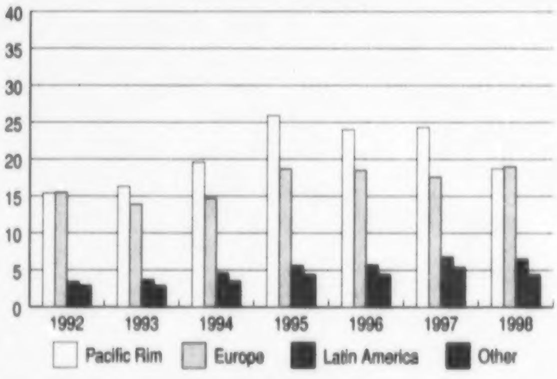
CANADA'S TRADE WITH COUNTRIES OTHER THAN THE US

Canada's trade with countries other than the US is less significant than trade with the US. From 1992 to 1997, exports grew by an average rate of 7.9 per cent, from $37 billion to $54 billion. In 1998, however, they fell to $49 billion, due to recessions and the financial crisis that hit the Asian and Latin American economies. Imports from countries other than the US were not affected by such financial crises and grew annually at an average rate of 10.7 per cent, from $52 billion (1992) to $95 billion (1998).

Figures 8-11 and 8-12 illustrate Canada's trade with countries other than the US.

FIGURE 8-11: EXPORTS TO NON-US COUNTRIES, 1992 – 1998

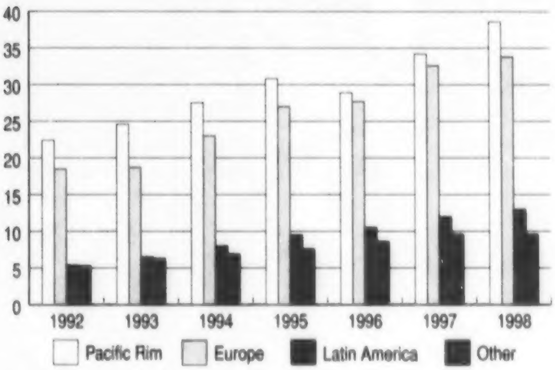
(Billions of dollars)



Source: Statistics Canada, International Trade Division

FIGURE 8-12: IMPORTS FROM NON-US COUNTRIES, 1992 - 1998

(Billions of dollars)



Source: Statistics Canada, International Trade Division

TRADE BY MODE

Marine and air were the primary modes used in trade with countries other than the US. From 1992 to 1998, marine's share declined in both exports and imports. Over the same period, air's share grew from 16 to 19 per cent in exports, and from 15 to 22 per cent in imports. This trend reflects the increasing trade in high-valued commodities such as electronic and telecommunications equipment. Air imports of electronic and electric machinery/equipment grew at an average annual rate of 28 per cent, jumping from $1.2 billion to $5.2 billion in value. The value of other equipment/machinery imported by air also increased by an average 23 per cent over the same period.

Table 8-10 shows modal shares of Canada's exports and imports with countries other than the US.

TABLE 8-10: CANADA–NON-US COUNTRIES TRADE BY MODE AND SECTOR, 1992 - 1998

(Billions of dollars)

		Share in per cent				
Year	***EXPORTS***[1]	*Road*	*Rail*	*Marine*	*Air*	*Other*
1992	37.2	8.1	0.7	74.7	16.4	0.0
1993	36.9	9.2	1.1	72.6	17.1	0.0
1994	42.4	9.6	1.5	72.4	16.5	0.0
1995	54.5	9.4	1.2	74.0	15.4	0.0
1996	52.6	9.0	1.1	72.9	17.0	0.0
1997	54.2	9.2	1.7	72.8	16.4	0.0
1998	48.6	7.8	1.3	71.4	19.4	0.0
Year	***IMPORTS***	*Road*	*Rail*	*Marine*	*Air*	*Other*
1992	51.5	32.0	4.9	44.9	14.6	3.7
1993	56.1	26.1	3.9	50.8	16.6	2.7
1994	65.4	25.4	3.7	50.2	18.7	2.0
1995	74.9	25.1	3.7	49.7	19.5	1.9
1996	75.6	26.2	3.5	47.4	20.3	2.7
1997	88.5	31.3	4.5	40.1	22.0	2.1
1998	95.0	35.9	3.6	37.5	21.8	

[1] Total exports including domestic exports and re-exports.

Source: Statistics Canada, Cat. 65-202 and 65-203: Special tabulations

DIRECTION OF TRADE FLOWS

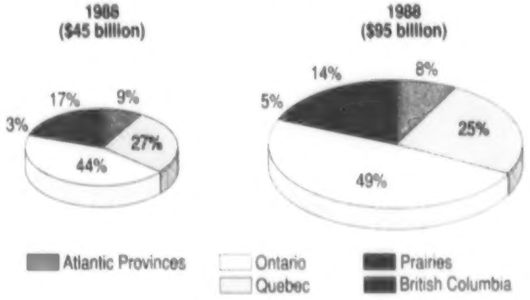
Between 1988 and 1998, eastern and western provinces generally shared exports to countries other than the US on an equal basis. In 1998, however, eastern provinces accounted for a slightly larger proportion (54 per cent) than western provinces. This reflects decreased exports to the Pacific Rim countries, which were primarily shipped from the western provinces.

In terms of the import of goods, the eastern provinces accounted for over 80 per cent, dominated by Ontario, with 49 per cent. From 1988 to 1998, the eastern provinces were the main provinces of clearance for imports from countries other than the US, and Ontario increased its share from 44 per cent to 49 per cent. Canada had a negative trade balance with most countries other than the US. In 1998, exports to overseas countries totalled $49 billion, while imports from the same countries reached $95 billion.

Figures 8-13 and 8-14 show provincial shares in Canada's trade with countries other than the US in 1988 and 1998.

FIGURE 8-13: IMPORTS FROM NON-US COUNTRIES BY PROVINCE OF CLEARANCE, 1988 vs 1998

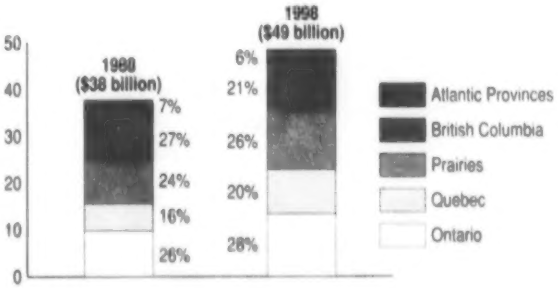
(Billions of dollars)



Source: Statistics Canada, International Trade Division

FIGURE 8-14: EXPORTS TO NON-US COUNTRIES BY PROVINCE OF ORIGIN, 1988 vs 1998

(Billions of dollars)



Source: Statistics Canada, International Trade Division

MAJOR TRADE FLOWS

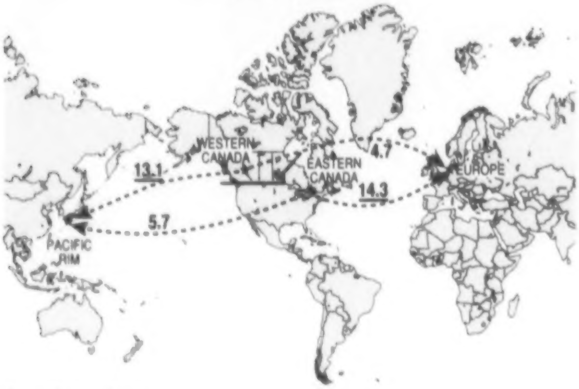
In 1998, four trade flows accounted for 78 per cent of exports to countries other than the US:

- eastern provinces to European countries: $14.3 billion
- western provinces to Pacific Rim countries: $13.1 billion
- eastern provinces to Pacific Rim countries: $5.7 billion
- western provinces to European countries: $4.7 billion.

Figures 8-15 and 8-16 illustrate Canada's main trade flow with countries other than the US.

FIGURE 8-15: EXPORTS TO NON-US COUNTRIES, MAIN TRADE FLOWS, 1998

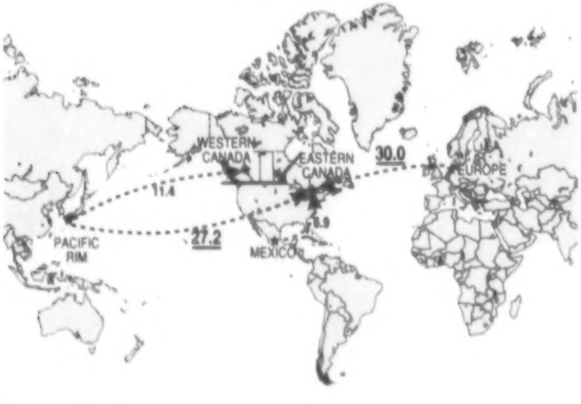
(Billions of dollars)



Source: Transport Canada

FIGURE 8-16: IMPORTS FROM NON-US COUNTRIES, MAIN TRADE FLOWS, 1998

(Billions of dollars)



Source: Transport Canada

In terms of exports, the largest trade flow from the eastern provinces to European countries totalled $14.3 billion. It was composed primarily of electric/electronic machinery and other equipment ($3.1 billion), non-ferrous products ($1.8 billion), forest and paper products ($1.5 billion), and food products ($1 billion). This trade was carried by water (60 per cent) and air (35 per cent). The flow from the western provinces to the Pacific Rim countries amounted to $13.1 billion. Forest and paper products, food products and mineral fuels (e.g. coal) were the main traded goods and were carried almost exclusively by water (96 per cent).

In 1998, four trade flows represented nearly 80 per cent of goods imported from countries other than the US:

- European countries to the eastern provinces: $30.0 billion
- Pacific Rim countries to the eastern provinces: $27.2 billion
- Pacific Rim countries to the western provinces: $11.4 billion
- Mexico to the eastern provinces: $6.9 billion.

Imports to the eastern provinces from European countries represented the largest trade flow with overseas countries, totalling $30 billion. The principal goods traded were electric/electronic machinery and other equipment ($8.2 billion), chemical products ($3.6 billion), mineral fuels ($3.1 billion), motor vehicles and parts, food, and steel products. The modes used were marine (47 per cent), followed by air (30 per cent) and road (20 per cent).[9] In this case, the road figure is probably overestimated, as part of it covers transshipment via the US and the rest is distributed on marine and air modes.

Imports to the western provinces from the Pacific Rim countries totalled $27.2 billion in 1998, and included machinery and equipment ($6.8 billion), electric/electronic machinery ($6.5 billion), steel products, motor vehicles and parts, and food processed products. Goods were shipped by road (40 per cent), water (30 per cent) and air (24 per cent). As mentioned previously, the road share is overestimated and would feed the marine and air modes.[10]

Tables 8-11 and 8-12 show the major trade flows between Canada and countries other than the US.

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[9] Truck and rail information can be used to estimate the importance of Canada's trade with countries other than the US, routed through the US. With imports, however, such an estimate is more difficult to determine, as cargo control documents information may lead to some underestimation of Canadian imports by the marine and air modes.

[10] Please see notes 5 and 9.

TABLE 8-11: CANADA'S EXPORT TRADE WITH NON-US COUNTRIES BY MAIN TRADE FLOWS, 1998

(Billions of dollars)

	Origin			
Exports to:	*Eastern provinces*	*Western provinces*	*Total*	*Main modes used (Per cent of total value)*
Europe	14.3	4.7	19.0	Marine (67), Air (29)
Pacific Rim[1]	5.7	13.1	18.7	Marine (82), Air (13)
Latin America[2]	3.3	1.7	5.0	Marine (55), Road (25)
Middle East and Africa	1.7	2.0	3.7	Marine (73), Air (17)
Mexico	0.7	0.7	1.5	Marine (42), Road (34)
Other	0.3	0.4	0.7	Marine (82), Air (13)
TOTAL	**26.1**	**22.5**	**48.6**	

1 Including Oceania and Asian countries, except Bangladesh, Sri Lanka, Maldives, India, and Pakistan.
2 Including Antilles, South and Central American countries except Mexico.

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

TABLE 8-12: CANADA'S IMPORT TRADE WITH NON-US COUNTRIES BY MAIN TRADE FLOWS, 1998

(Billions of dollars)

	Destination			
Imports from:	*Eastern provinces*	*Western provinces*	*Total*	*Main modes used (Per cent of total value)*
Pacific Rim[1]	27.2	11.4	38.6	Marine (39), Road (37)
Europe	30.0	3.8	33.8	Marine (45), Air (31)
Mexico	6.9	0.8	7.7	Road (83), Rail (8)
Latin America[2]	4.8	0.5	5.3	Marine (41), Road (40)
Middle East and Africa	3.1	0.2	3.4	Marine (70), Air (13)
Other	5.3	1.0	6.3	Marine (62), Air (23)
TOTAL	**77.3**	**17.7**	**95.0**	

1 Including Oceania and Asian countries, except Bangladesh, Sri Lanka, Maldives, India, and Pakistan.
2 Including Antilles, South and Central American countries except Mexico.

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

DUTIES ON IMPORTS

The influence of the General Agreement on Tariffs and Trade (GATT) was felt on goods imported from countries other than the US. From 1988 to 1998, the share of duties collected by Canada Customs on these goods dropped from 5.7 per cent to 2.5 per cent. Decreased duties paid on imported goods have been visible mainly since 1992.

Table 8-13 reveals the share of duties collected on selected imported goods from countries other than the US.

TABLE 8-13: CANADA/NON-US COUNTRIES TRADE, SHARE OF DUTIES ON GOODS IMPORTED FROM NON-US COUNTRIES

(Per cent)[1]

	1988	*1992*	*1995*	*1998*
Total goods	5.7	5.2	3.5	2.5
Selected goods:				
Vehicle and Parts	5.9	5.2	3.0	2.8
Machinery and Equipment	2.0	1.6	0.9	0.2
Electrical Machinery	4.1	2.9	1.6	0.5
Household	10.3	7.8	5.6	3.2
Paper and Other Products	5.5	4.9	3.8	1.4
Chemical Products	4.6	4.9	1.5	1.0
Plastic and Rubber Products	8.0	7.7	6.0	4.5
Iron and Steel Products	6.1	6.1	4.8	3.0
Non-metallic Products	8.7	6.9	5.9	2.6
Non-ferrous Products	4.9	4.0	2.4	1.5
Dairy Products	1.9	1.5	1.7	1.9

1 Ratio of duties collected to total value of imported goods.

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

RECENT TRENDS

World economy and trade have been affected in recent years by financial crises and recessions that started in Japan and then spread to neighbouring Asian countries and Latin America. Canadian exports were significantly affected in 1998 as domestic exports to Japan and Asian APEC[11] (Asia-Pacific Economic Cooperation group) countries declined by over 25 per cent from their 1997 levels.

In 1999, economies of Asian APEC countries did not fully recover and remained sluggish. As a result, Canada's exports to Japan and other APEC countries decreased by 3.5 and 5.4 per cent, respectively, from 1998 levels. Canadian exports to other Latin American countries fell by 20 per cent from 1998 to 1999.

Over the same time, domestic exports to the US increased by over 14 per cent. By the end of 1999, Canada's exports to the US accounted for 87 per cent of total Canadian exports, compared with 81 per cent two years previously.

In 1999, imports to Canada from Japan and Asian APEC countries were strong, with a combined growth rate of nine per cent compared with that of 1998. This growth exceeded that of imports from the US, which stood at 5.7 per cent for the same period. Tables 8-14 and 8-15 reveal Canada's exports and imports by major country grouping over the 1998–1999 period.

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[11] At the end of 1999, the Asia-Pacific Economic Cooperation group (APEC) had 21 members: besides Canada and the US, there were Australia, New Zealand and Papua New Guinea; Chile, Peru and Mexico; Brunei Darussalam, the People's Republic of China, Hong Kong, Indonesia, Japan, South Korea, Malaysia, Philippines, Singapore, Taiwan, Thailand, Vietnam and Russia.

TABLE 8-14: CANADIAN EXPORTS BY COUNTRY GROUPINGS, 1998 AND 1999

Destination	*1998*	*1999*	*Growth rate*
	(Billions of dollars)		*(per cent)*
US	251.1	286.8	14.2
Non-US countries	46.4	43.6	(5.8)
Japan	8.6	8.3	(3.5)
Other APEC[1]	10.7	10.1	(5.4)
Mexico	1.4	1.5	8.6
Other Latin America[2]	3.9	3.1	(20.3)
Western Europe	17.1	16.2	(5.4)
Other countries	4.7	4.5	(5.0)
Total World	**297.5**	**330.4**	**11.1**

Note: Preliminary data for 1999

1 Including Australia, New Zealand and Papua New Guinea; Chile and Peru; Brunei Darussalam, People's Republic of China, Hong Kong, Indonesia, South Korea, Malaysia, Philippines, Singapore, Taiwan, Thailand, Vietnam and Russia.

2 Including Antilles, South and Central American countries, except Mexico, Chile and Peru.

Source: Statistics Canada, Cat. 65-001, December 1999

TABLE 8-15: CANADIAN IMPORTS BY COUNTRY GROUPINGS, 1998 AND 1999

Origin	*1998*	*1999*	*Growth rate*
	(Billions of dollars)		*(per cent)*
US	203.5	215.1	5.7
Non-US countries	94.8	104.8	10.5
Japan	14.0	15.0	7.4
Other APEC[1]	25.7	28.1	9.2
Mexico	7.7	9.5	24.0
Other Latin America[2]	4.8	4.8	(0.7)
Western Europe	32.0	35.8	12.0
Other countries	10.6	11.6	8.9
Total World	**298.4**	**319.9**	**7.2**

Note: Preliminary data for 1999

1 Including Australia, New Zealand and Papua New Guinea; Chile and Peru; Brunei Darussalam, People's Republic of China, Hong Kong, Indonesia, South Korea, Malaysia, Philippines, Singapore, Taiwan, Thailand, Vietnam and Russia.

2 Including Antilles, South and Central American countries, except Mexico, Chile and Peru.

Source: Statistics Canada, Cat. 65-001, December 1999

TRANSPORTATION AND TOURISM

9

Total tourism[1] spending in Canada in 1998 amounted to $47.1 billion of which $18.5 billion, or 39 per cent, was accounted for by expenditures on transportation.

Travel within, to and from Canada generally increased in 1999 as the Canadian dollar appreciated slightly and as the performance of the Canadian economy improved. Domestic travel by Canadians, after increasing in 1998, also rose in the first three quarters of 1999. Canadians made more trips overseas, as well as overnight trips to the US in 1999, but made fewer same-day trips to the US.

In 1999, the number of visitors from the US to Canada increased, although at a slower pace than in 1998. More overseas visitors came to Canada in 1999; this included a recovery in the number of visitors from the Asia-Pacific region. Increased spending by foreign tourists in Canada meant that Canada's travel account deficit fell to $1.9 billion in 1999, its lowest level since 1987.

Total tourism spending in Canada in 1998 amounted to $47.1 billion, of which $18.5 billion, or 39 per cent, were expenditures on transportation. Of total tourism spending in Canada, $32.9 billion, or 70 per cent was spent by Canadians, and $14.2 billion, or 30 per cent, was spent by foreign visitors.

TOURISM EXPENDITURES

TOURISM SPENDING IN CANADA

Tourism spending in Canada is made up of spending by Canadians and foreign visitors. Domestic demand refers to spending by Canadians on tourism in Canada, as opposed to tourism exports, which refer to expenditures made by foreign visitors in Canada. Tourism commodities are those for which a significant amount of the demand comes from tourism expenditures.

In 1998, tourism spending in Canada reached $47.1 billion, up seven per cent from 1997. This growth continued in 1999, with expenditures in the third quarter reaching $18.3 billion, up six per cent from the same period in 1998. The relatively low value of the Canadian dollar meant both more domestic tourism and more international tourism expenditures in Canada.

DISTRIBUTION OF SPENDING

Figure 9-1 shows the distribution of tourism spending in Canada for 1998. Canadians spent 70 per cent of the $47.1 billion total expenditures on tourism, or $32.9 billion, while foreign tourists spent 30 per cent. The foreign proportion of tourism spending continued to increase in 1998, up from 25 per cent in 1994 and 29 per cent in 1997.

In the first three quarters of 1999, domestic demand strengthened compared with foreign expenditures. During the third quarter of 1999, domestic tourism expenditures rose 6.1 per cent over the same period in 1998, up from 3.5 per cent for the first quarter. The rate of increase in foreign spending fell to 6.7 per cent and 5.8 per cent for the second and third quarters of 1999, down from the 10 to 13 per cent increases for the previous five quarters.

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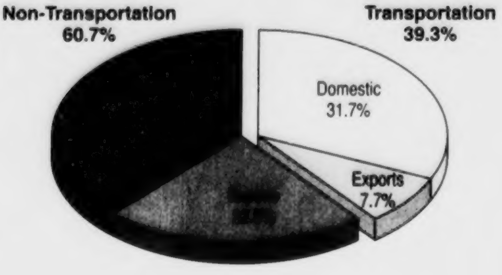
[1] Tourism refers to people travelling to and staying in places outside their usual environment. These trips are for leisure, business and other purposes and do not last longer than one year. For Canadians within Canada, for a trip to be considered as tourist travel, it must be at least 80 kilometres from the traveller's place of residence. International travel refers to travel to or from Canada. This definition of tourism — a much broader than the common definition, which includes only leisure travel, often only to major destinations — is used by the United Nations World Tourism Organization, Statistics Canada and the Canadian Tourism Commission.

FIGURE 9-1: DISTRIBUTION OF TOURISM SPENDING IN CANADA, 1998

(Total $47.1 billion)

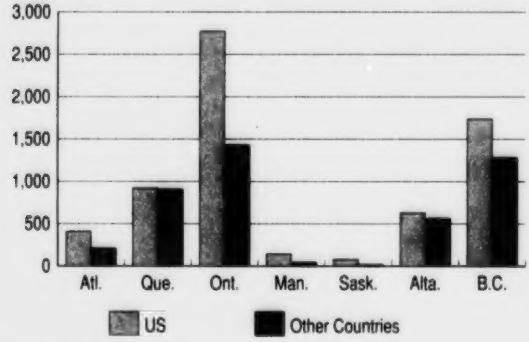


Source: Statistics Canada, Cat. 13-009-XPB

Figure 9-2 shows the distribution of tourism spending on overnight trips by non-residents in 1998. Tourism spending by this group increased in all regions of Canada in 1998. In Quebec, however, it rose only two per cent, compared with almost ten per cent or more in the other regions. Overseas tourism spending fell in Quebec. It also fell in Ontario and in Saskatchewan, where it has less importance than US tourist expenditures. Spending by Americans in Canada rose almost 15 per cent in both the Atlantic Provinces and Quebec, and by more than 20 per cent in all other regions. Overall, US residents accounted for 60 per cent of spending by non-residents in Canada and 75 per cent of all trips in 1999, up from 54 per cent and 72 per cent, respectively, in 1998.

FIGURE 9-2: TOURISM SPENDING ON OVERNIGHT TRIPS IN CANADA BY PROVINCE, 1998

(Millions of dollars)



Source: Statistics Canada, Cat. 66-201

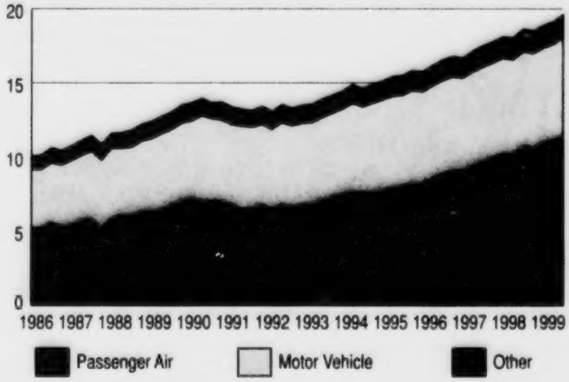
Spending on Transportation

Tourism expenditures on transportation were $18.5 billion in 1998, up five per cent from 1997 and accounting for 39 per cent of all tourism spending in Canada. Of this amount, $10.6 billion, or 57 per cent, was spent on air transportation, an eight per cent increase from 1997. The other major spending category, motor vehicle transportation, made up 35 per cent of the total in 1998, compared with 37 per cent in 1997. This drop was due to lower fuel prices. Intercity bus and rail transportation remained unchanged from 1997, accounting for three per cent and one per cent, respectively, of tourism spending on transportation. Other forms of transportation spending, including water transport, urban transit, taxi and parking, made up four per cent.

Figure 9-3 shows the quarterly distribution of tourist spending on transportation from 1986 to 1999.

FIGURE 9-3: QUARTERLY DISTRIBUTION OF TOURISM SPENDING ON TRANSPORTATION, 1986 – 1999

(Billions of dollars, seasonally adjusted[1])



1 Quarterly data at annual rates

Source: Statistics Canada, Cat. 13-009-XPB

Supply and Demand

Table 9-1 shows demand and supply for tourist goods in Canada in 1998, as presented in Statistics Canada's National Tourism Indicators. Demand corresponds to expenditures on tourist goods, while supply corresponds to the production of those goods. The last column in Table 9-1 shows tourism spending (demand) as a percentage of an industry's output (supply).

TABLE 9-1: SUPPLY AND DEMAND OF TOURIST GOODS IN CANADA, 1998

(Millions of dollars)

	Demand				*Demand as per cent of*
	Domestic	*Exports*	*Total*	*Supply*	*supply*
Transportation	14,897	3,613	18,510	41,247	45
Passenger Air Transport	8,577	2,004	10,581	11,381	93
Passenger Rail Transport	133	83	216	234	92
Interurban Bus Transport	407	189	596	654	91
Vehicle Rental	360	599	959	1,081	89
Vehicle Repairs and Parts	1,865	80	1,945	10,762	18
Vehicle Fuel	3,109	424	3,533	14,855	24
Other Transportation	446	234	680	2,280	30
Accommodation	3,561	3,159	6,720	7,205	93
Food and Beverage Services	4,426	3,290	7,716	32,868	23
Other Tourism Commodities	3,479	1,321	4,800	14,150	34
Total Tourism Commodities	26,363	11,383	37,746	95,470	40
Total Other Commodities	6,497	2,806	9,303		
Tourism Expenditures	**32,860**	**14,189**	**47,049**		

Source: Statistics Canada Cat. 13-009-XPB

Tourism spending accounted for 45 per cent of all transportation spending by consumers and businesses in 1998. It made up a high proportion of expenditures for intercity transportation services and a lesser amount for expenditures related to local travel. Ninety-three percent of air transportation receipts resulted from tourism spending. Similarly, a high proportion of spending for rail transport, intercity buses and vehicle rentals were accounted for by tourism. The proportion is much lower, around 20 per cent, for local transportation, including the operation of individually owned motor vehicles and spending on taxis and local transit, which are included under "Other Transportation" in Table 9-1.

THE TRAVEL ACCOUNT AND INTERNATIONAL PASSENGER FARES

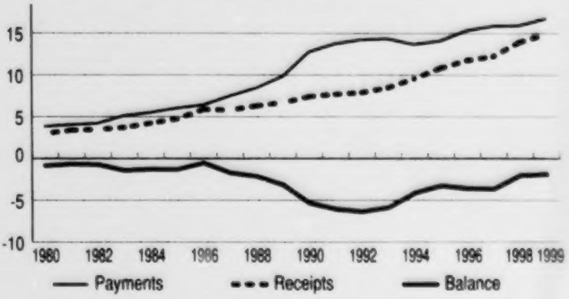
TRAVEL DEFICITS

Canada's international travel account compares the value of spending by foreigners travelling in Canada against the value of spending by Canadians travelling outside Canada. A deficit occurs when Canadians are spending more outside Canada than foreigners are spending in Canada.

Figure 9-4 shows the trends in Canada's international travel account from 1980 to 1999. Canada's travel deficit in 1999 was the smallest since 1987, falling by 6.2 per cent to $1.9 billion and continuing the decrease of 1998.

FIGURE 9-4: CANADA'S INTERNATIONAL TRAVEL ACCOUNT, 1980 – 1999

(Billions of dollars)



Source: Statistics Canada, Cat. 13-009-XPB

Canadians spent a total of $16.7 billion outside the country in 1999, up 5.1 per cent from 1998. Foreign travellers spent $14.9 billion in Canada, a 6.7 per cent increase. Canadians travelling to the US increased their spending by 6.5 per cent to $10.5 billion, while Americans increased their spending in Canada by 5.4 per cent to $9.1 billion. Canada's travel deficit with the US rose 14.1 per cent to $1.4 billion, while the deficit with other countries fell to $485 million. This is because Canadians increased their overseas spending only by 2.7 per cent to $6.2 billion and overseas visitors increased their expenditures in Canada by 8.8 per cent to $5.7 billion.

INTERNATIONAL PASSENGER FARES

In 1999, Canadians purchased $3.73 billion worth of passenger fares from foreign carriers. In turn, Canadian carriers sold $2.67 billion in passenger fares to foreign travellers, which left a deficit of $1.06 billion in this account. Air fares accounted for almost all these transactions. Canadians purchased $3.65 billion in air fares from foreign carriers, while Canadian air carriers sold $2.63 billion in air fares to foreign travellers. For land transportation, Canadians spent $76 million on passenger fares from foreign carriers, while foreign travellers spent $36 million on fares from Canadian carriers. Passenger fares for water transportation are included with air fares, and they represent an amount smaller than those for land.

TRAVEL OVERVIEW

Table 9-2 shows a summary of Canadian travel, which is made up of domestic travel (travel by Canadians in Canada) and international travel (travel by Canadians outside the country and travel to Canada by visitors from other countries).

TABLE 9-2: DOMESTIC AND INTERNATIONAL TRAVEL IN CANADA, 1998 – 1999

	1999	*1998*			
	Person-trips (000)	*Person-trips (000)*	*Duration (nights)*	*Average distance (km)*	*Average spending ($)*
Domestic		144,257	1.7	293	132
Same Day		69,847	-	149	52
Intraprovincial		66,545	-	144	49
Interprovincial		3,302	-	236	112
Overnight		74,409	3.3	430	206
Intraprovincial		59,511	2.8	270	134
Interprovincial		14,898	5.4	1,069	194
International	95,556	95,049			
Canadians	46,344	46,985	-	-	312
to US	42,087	42,768	-	-	206
Same day	28,043	29,346	-	-	32
Overnight	14,044	13,426	7.4	-	588
to other countries	4,256	4,218	17.1	-	1387
Americans	44,793	43,857	-	-	191
Same day	29,486	28,968	-	-	57
Overnight	15,307	14,890	3.7	-	450
Non-US residents	4,419	4,207	-	-	-
Same day	197	229	-	-	43
Overnight	4,222	3,978	10.9	-	1134

Source: Statistics Canada, International Travel Survey and Canadian Travel Survey

DOMESTIC TRAVEL

In 1998, Canadians made 144.3 million trips that were considered tourist travel in Canada. This is a 13 per cent increase from the 128 million trips taken in 1997. Both same-day and overnight trips increased by about the same percentage. The increase in domestic trips continued in 1999. In the first three quarters, Canadians made 115.3 million domestic person-trips — a 3.9 per cent increase over the same period in 1998. An overview of domestic travel in Canada for 1998 is presented in Table 9-2.

In 1998, 74.4 million, or just over half (51 per cent), of all person-trips were for more than one night, whereas 69.9 million trips were completed on the same day. Of the overnight trips, 59.5 million, or 80 per cent, were to a destination within the same province, which is unchanged from 1997. The average one-way distance for all domestic trips was 293 kilometres. Overnight interprovincial trips went the farthest, with an average of 430 kilometres, and lasted the longest, with an average of 5.4 nights.

DISTRIBUTION OF TRAVEL BY PROVINCE

The distribution of travel volumes by province is reflective of the provincial distribution of the Canadian population, as shown in Table 9-3. In 1998, Ontario, the most populous province, was the destination for 36 per cent of all domestic trips made, followed by Quebec with 21 per cent, Alberta with 14 per cent and British Columbia with 11 per cent. The number of trips taken by provincial residents also closely followed the relative provincial population size. The two provinces with the largest differences between the relative population size and the number of trips taken was Alberta, with about five per cent more trips than its relative population size would indicate, and Quebec, with about five per cent fewer trips. On a per-capita basis, each Canadian took 4.8 trips in 1998. Residents of Prince Edward Island had the lowest travel rate, at 3.2 trips per year, while those living in the Prairie Provinces, New Brunswick and Nova Scotia travelled more than the national average.

TABLE 9-3: DISTRIBUTION OF DOMESTIC TRAVEL BY PROVINCE, 1998

(Thousands of person-trips)

	Province of destination	*Share of total (%)*	*Province of origin*	*Share of total (%)*	*Population*	*Share of total (%)*	*Trips per capita*
Canada	144,257		144,357		30,297		4.8
Newfoundland	2,552	1.8	2,498	1.7	546	1.8	4.6
Prince Edward Island	811	0.6	527	0.4	137	0.5	3.8
New Brunswick	6,467	4.5	6,450	4.5	936	3.1	6.9
Nova Scotia	4,101	2.8	3,908	2.7	753	2.5	5.2
Quebec	30,116	20.9	29,578	20.5	7,335	24.2	4.0
Ontario	51,393	35.6	52,435	36.3	11,414	37.7	4.6
Manitoba	6,040	4.2	6,304	4.4	1,138	3.8	5.5
Saskatchewan	7,529	5.2	7,526	5.2	1,026	3.4	7.3
Alberta	19,576	13.6	20,153	14.0	2,910	9.6	6.9
British Columbia	15,499	10.7	14,868	10.3	4,003	13.2	3.7

Source: Statistics Canada, Canadian Travel Survey

PURPOSE OF TRAVEL

The reasons behind Canadians' travel in Canada did not change significantly in 1998. As in 1997, most trips were either to visit friends or relatives, or for pleasure, accounting for 36 and 37 per cent, respectively, of total trips in 1998. Travelling for business and attending conventions made up only 14 per cent of all domestic trips, although this category accounts for a significant percentage of all spending. Personal reasons, such as for health or religion, were the main purpose behind 13 per cent of domestic trips.

MEANS OF TRAVEL

As Table 9-4 shows, the automobile is the most common means of transportation in Canada, accounting for 91.7 per cent of all trips taken in 1998, virtually unchanged from 1997. The automobile accounted for 96.1 per cent of same-day trips compared with 87.5 per cent of overnight trips. The second most important means of transportation is the airplane, which accounted for 4.5 per cent of all travel. Air travel was particularly important for overnight business, accounting for 30.5 per cent of all trips. Compared with 1997, however, the share of automobile travel for overnight business increased by 2.5 per cent and, consequently, the share of airplane and bus travel showed small decreases.

TABLE 9-4: DOMESTIC TRAVEL BY MODE OF TRANSPORT, AND BY PURPOSE, 1998

(Per cent of person-trips 80 km +)

			Overnight, primary purpose		
	Total	*Same day*	*Total*	*Non-Business*	*Business*
Car	91.7	96.1	87.5	90.5	65.0
Plane	4.5	0.5	7.7	4.7	30.5
Bus	2.4	2.0	2.8	2.9	2.2
Rail	0.6	0.2	1.0	0.9	1.5
Boat	0.4	0.2	0.6	0.5	-
Other	0.4	1.0	0.4	0.5	0.0
Total	100.0	100.0	100.0	100.0	100.0

Source: Statistics Canada, Canadian Travel Survey

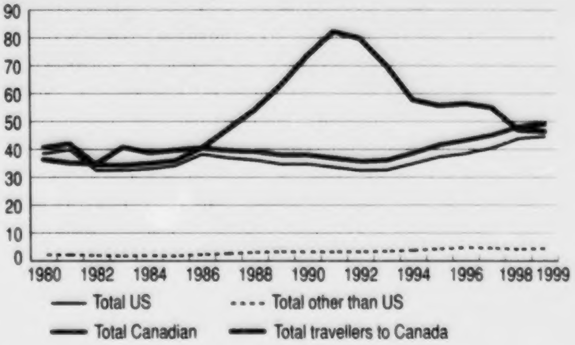
INTERNATIONAL TRAVEL

Figures for international travel in 1999, by both Canadians and non-residents, are shown in Table 9-2. In 1999, 95.6 million international travellers crossed Canadian borders, a 0.5 per cent increase from 1998. Overall, the number of Canadians who took international trips fell 1.4 per cent to 46.3 million. Trips by Canadians to the US showed a 1.6 per cent decrease, while the number of Canadians travelling overseas increased just less than one per cent. Americans took 44.8 million person-trips, or 2.1 per cent more trips, to Canada in 1999 than in 1998. The number of trips to Canada by other nationalities rose five per cent to 4.4 million.

Figure 9-5 shows a steady increase in past years since 1992 of Americans coming into Canada and a decline in international travel by Canadians.

FIGURE 9-5: INTERNATIONAL TRAVELLERS ENTERING CANADA, 1980 – 1999

(Millions of person-trips)



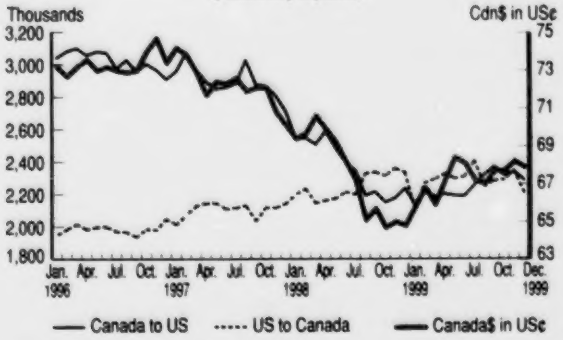
Source: Statistics Canada, Cat. 66-201

CANADA/US TRAVEL

Figures 9-6 and 9-7 show trends in Canada/US travel. Travel between Canada and the US accounted for 91 per cent of all international trips in 1998. The most significant portion of Canada/US travel is same-day trips by automobile, which account for 63.8 per cent of all trips between the two countries. After the dollar reversed its decline in mid-1998, the number of Canadians visiting the US, both overnight and same-day, showed a similar reversal in decline. In addition, the number of same-day visits by Americans to Canada has levelled off, but the number of overnight visits has increased steadily. Compared with 1998, same-day visits by Canadians to the US fell 4.4 per cent in 1999 to 28.0 million, well below the 18.1 per cent drop in 1998. Overnight visits rose 4.6 per cent to 14.0 million, a reversal from the 11.2 per cent drop the previous year. Same-day trips by Americans to Canada rose 1.8 per cent to 29.5 million and overnight trips rose 2.8 per cent to 15.3 million.

FIGURE 9-6: SAME-DAY CANADA/US AUTOMOBILE EXCURSIONS, 1996 – 1999

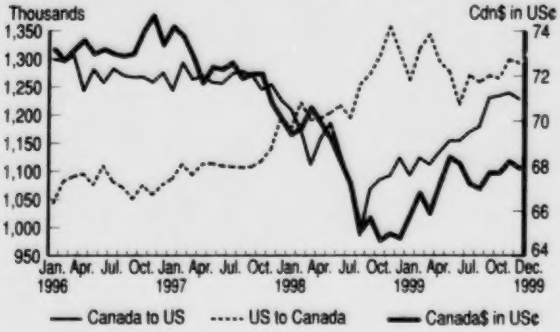
(Seasonally adjusted)



Source: Statistics Canada, Cat. 66-201

FIGURE 9-7: OVERNIGHT CANADA/US EXCURSIONS, 1996 – 1999

(Seasonally adjusted)



Source: Statistics Canada, Cat. 66-201

Distribution of Travel

Although the number of Canadians visiting the US in 1998 declined 14 per cent from 1997, the states that Canadians visited most often in past years continued to be the most popular. Of total same-day visits in 1998, New York and Michigan accounted for 18 per cent and nine per cent, respectively, while Pennsylvania and Washington each accounted for six per cent. The most popular states for overnight stays in 1998 were New York, with 12 per cent of the total trips, Florida with nine per cent, Washington at eight per cent, Michigan with seven per cent, and California with six per cent. In 1998, while overnight trips to Florida and California increased by ten per cent and seven per cent, respectively, trips to New York declined by nine per cent.

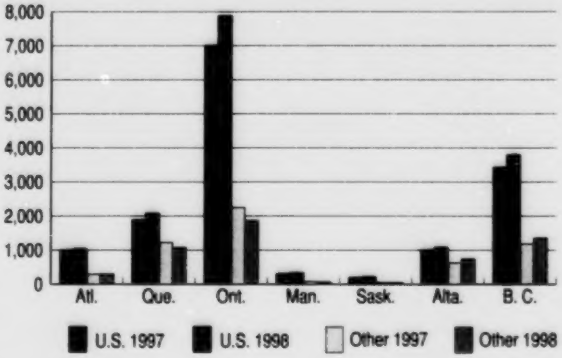
Ontario was by far the most popular province for Americans travelling to Canada, accounting for 47 per cent of the overnight trips charted in Figure 9-8. British Columbia accounted for 25 per cent and Quebec for 15 per cent, while nine per cent went to Alberta and seven per cent to the Atlantic Provinces.

Purpose of Travel

In 1998, pleasure, including recreation and holiday, was the primary reason for 52 per cent of Canadians' overnight trips to the US and 57 per cent of Americans' overnight trips to Canada. Visiting friends and relatives was the reason for 20 per cent of Canadian trips and 16 per cent of American trips. Business was the main reason for 19 per cent of Canadian trips and 16 per cent of American trips, while personal reasons, such as health and religion made up the remaining nine per cent of both Canadian and American trips.

FIGURE 9-8: DESTINATION BY PROVINCE OF OVERNIGHT INTERNATIONAL TRAVELLERS, 1997 and 1998

(Thousands of visits)



Source: Statistics Canada, Cat. 66-201

Means of Travel

Table 9-5 shows that automobile trips were the most important part of Canada/US same-day travel. In 1999, 96.5 per cent of the same-day trips that Canadians made to the US were by automobile, and 93.3 per cent of these trips made by Americans to Canada were also by automobile. Bus travel accounted for 2.5 per cent of Canadian same-day trips and 3.4 per cent of American trips.

TABLE 9-5: CANADA/US TRAVEL BY TRANSPORTATION MODE, 1999

(Thousands of person-trips)

	Canadians		Americans	
	Total	*Per cent*	*Total*	*Per cent*
Same Day	28,043	100.0	29,486	100.0
Auto	27,067	96.5	27,497	93.3
Plane	147	0.5	476	1.6
Bus	699	2.5	1,003	3.4
Other	130	0.5	510	1.7
Overnight	14,044	100.0	15,307	100.0
Auto	7,857	55.9	9,602	62.7
Plane	4,911	35.0	3,790	24.8
Bus	692	4.9	814	5.3
Boat	106	0.8	385	2.5
Foot	353	2.5	562	3.7
Other	126	0.9	153	1.0
Total	**42,087**		**44,793**	

Source: Statistics Canada, Cat. 66-201

For overnight trips in 1999, Table 9-5 shows that automobile travel was less dominant but still the most important mode of travel: 55.9 per cent of the overnight trips by Canadians and 62.7 per cent of those by Americans were made by automobile. Air is the next most important mode for overnight travel, accounting for 35.0 per cent of Canadian trips and 24.8 per cent of American trips.

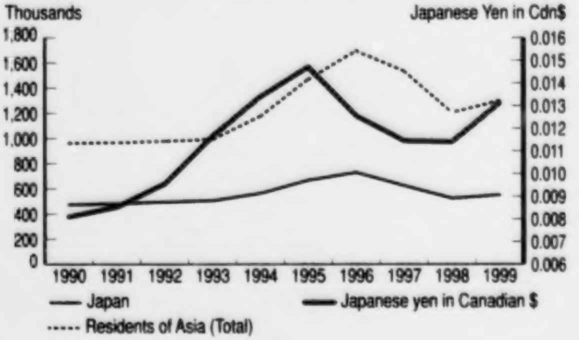
TRAVEL BETWEEN CANADA AND COUNTRIES OTHER THAN US

Overseas Travel to Canada

Overall, the number of visitors from overseas countries rose 5.2 per cent to 4.4 million in 1999, after falling 8.3 per cent in 1998. Figure 9-9 shows that the number of visitors from Asia rose 7.6 per cent to 1.3 million in 1999, reversing the decline of 21.4 per cent in 1998. The number of Japanese visiting in 1999 rose 4.9 per cent, after declining 16.0 per cent in 1998 as the Japanese yen rose 15.0 per cent. The number of visitors from South Korea and Taiwan soared 50.5 and 24.8 per cent, respectively, after falling 59.0 and 14.7 per cent in 1998.

FIGURE 9-9: VISITORS TO CANADA FROM ASIA, 1990 – 1999

(Thousands of visits)

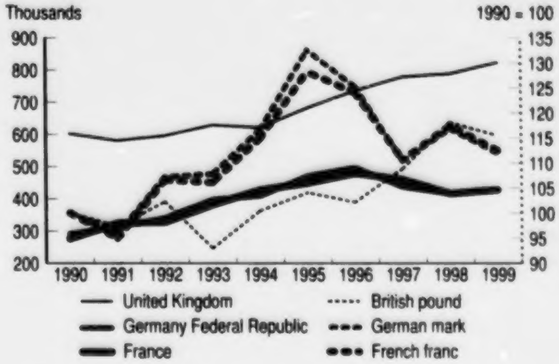


Source: Statistics Canada, Cat. 66-201; Bank of Canada

Figure 9-10 shows that the number of visitors from Europe also reversed the decline of 1998, rising 4.1 per cent after falling 2.4 per cent in 1998. In 1999, all major countries in Europe other than Switzerland showed increases in visitors to Canada. Visitors from France and Germany increased 2.9 per cent and 2.7 per cent respectively, while visitors from the UK increased 4.5 per cent. The increase in visitors from Europe has occurred despite a decline in the value of the European currencies.

FIGURE 9-10: VISITORS TO CANADA FROM EUROPE, 1990 – 1999

(Thousands of visits)



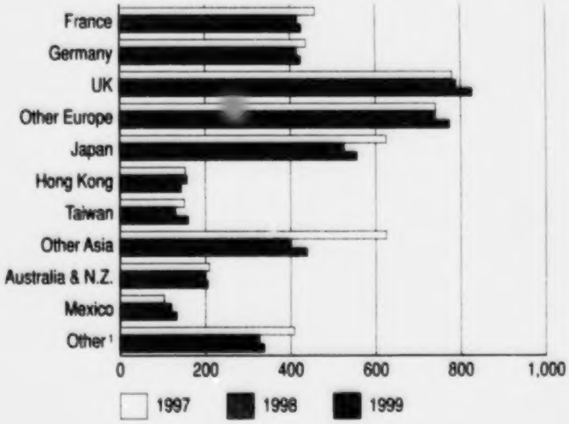
Note: Indices for exchange rates are foreign currencies in terms of C$.

Source: Statistics Canada, Cat. 66-201; Bank of Canada

Figure 9-11 shows the origin of the visitors to Canada in recent years.

FIGURE 9-11: VISITORS FROM COUNTRIES OTHER THAN THE UNITED STATES BY REGION, 1997 – 1999

(Thousands)



[1] Mexico, Caribbean, Central and South America and Africa.

Source: Statistics Canada, Cat. 66-201

Distribution of Travel

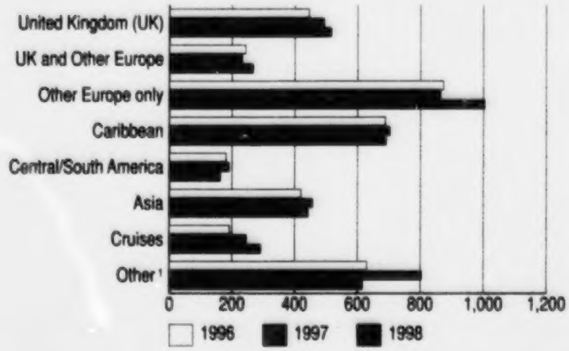
Ontario remains the most popular destination for international visitors, being the destination of 47 per cent of all overseas visits. British Columbia was the second most popular with 25 per cent. Visits by Americans increased in all regions of Canada in 1998. Overseas visits declined 16.5 per cent in Ontario, 12.0 per cent in Quebec, and about ten per cent in Manitoba and Saskatchewan. They did, however, rise 19 per cent in Alberta, 14.8 per cent in British Columbia, and three per cent in the Atlantic Provinces. Figure 9-8 shows the destination by provincial region for overseas visitors staying at least one night.

Canadian Travel Overseas

In 1999, Canadians only marginally increased their overseas trips after increasing them by 5.9 per cent in 1998 and by 8.5 per cent 1997. In 1998, Canadians increased their travel to Europe: 16.2 per cent to continental Europe, 14.7 per cent to Europe and the UK, and 4.7 per cent to the UK. Travel to the Caribbean declined slightly, whereas travel to Central and South America fell 15.2 per cent. Cruise travel continued to increase, rising 18.8 per cent, following a 27.6 per cent rise in 1997. Figure 9-12 shows that Europe remains the most popular overseas destination for Canadians, accounting for 42 per cent of total overseas trips. The Asian financial crisis continued to affect trips to the Far East, which fell 3.1 per cent in 1998.

FIGURE 9-12: CANADIAN TRAVEL TO COUNTRIES OTHER THAN THE UNITED STATES, 1996 – 1998

(Thousands)



[1] St. Pierre & Miquelon, Caribbean, Mexico and Oceania (including Australia).

Source: Statistics Canada, Cat. 66-201

Reasons for Overseas Travel

Travelling for pleasure is the most common reason for overseas travel. In 1998, it accounted for 57 per cent of Canadian overseas travel and 50 per cent of travel to Canada from overseas visitors. Visiting friends and relatives was the main purpose of 20 per cent of Canadian overseas travel and 27 per cent of overseas travel to Canada. Business travel was the reason for 18 per cent of overseas travel in both directions. All three types of travel — pleasure, visiting and business — increased for Canadians but decreased for overseas travellers to Canada in 1998.

Means of Travel

Virtually all international travel to and from overseas countries is by air, although about 20 per cent of overseas visitors entered Canada by surface transportation from the US in 1998. Thirty-eight per cent of non-Americans coming to Canada by air entered via the US in 1999, up from the 33 per cent of the past two years. Fifteen per cent of Canadians returning by air from countries other than the US returned via the US in 1999. This percentage has been stable in recent years.

TRANSPORTATION INFRASTRUCTURE 10

Efforts are continuing to make Canada's transportation infrastructure more modern, more efficient and sustainable. In 1999, further rationalizations, transfers and changes of ownership improved productivity in several cases while maintaining or improving safety.

Transportation infrastructure plays a vital role in the country's economy by keeping people and goods moving — across the country and internationally. It is a vast network of roads, railways, airports, ports and waterways that stretch from coast to coast and to the far north.

This chapter highlights the events and issues relating to Canada's transportation infrastructure, and describes the most current status of its major elements by mode.

RAIL TRANSPORTATION INFRASTRUCTURE

In 1999, Canadian railways operated slightly less than 50,000 route-kilometres of track. This was a decline of less than one per cent over the previous year, mainly as a result of discontinuances. While the total extent of the system remained essentially unchanged, the character of the industry continued to evolve rapidly.

As illustrated in Table 10-1, CN's Canadian network was reduced by over eight per cent during 1999, with its route-kilometres dropping below 40 per cent of the industry total. CPR's network also shrank, though by somewhat less, bringing its network to less than 30 per cent of the total for all Canadian railways.

In contrast to the decline in the Class I[1] carrier network, the Canadian shortline industry continued its pattern of strong growth. In 1999, the regional and shortline network grew by just over 12 per cent from 1998, and represented 30 per cent of the entire Canadian rail network. With the completion of CN's and CPR's most recent three-year rationalization plans, the regional/shortline segment should account for over 35 per cent of the Canadian system, while CN and CPR together should account for about 65 per cent, but only when done.

TABLE 10-1: RAILWAYS IN CANADA, 1999

	1999 owned/ leased route kilometres	*1998 owned/ leased route kilometres*	*Per cent of total (1999)*	*Percentage change over previous year*
CN	19,448	21,263	39.0	(8.5)
CPR	14,671	15,034	29.4	(2.4)
Regional and Shortline Railways	14,987	13,238	30.1	13.2
All Others[1]	732	688	1.5	6.4
Total	49,839	50,222		(0.8)

1 Terminal and switching railways, Canadian subsidiaries of US railroads, and passenger and commuter railways.

Source: Transport Canada

RATIONALIZATION

Railway rationalization refers to the ways a railway/ carrier can deal with track that is no longer economically viable. Typically, the rationalization of the Canadian rail system has taken the form of transfers of lines to other, smaller carriers, or through the discontinuance of operations over certain lines, usually when all other avenues have been explored. The principal consideration behind rail rationalization is the need to reduce the costs of services being offered.

In the case of line transfers, lines that are considered to be marginally economical from a carrier perspective may be offered for sale to another carrier to allow service over these lines to continue. In practice, it is usually the Class I carriers, CN and CPR, that offer lines for sale or lease to potential shortline operators. Shortline operators generally have lower operating costs than Class I carriers, mainly because of lower costs for labour. Shortline operators also tend to improve the level of service to shippers on their lines, which often improves their overall revenue stream.

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[1] Class I railways are generally defined to include CN and CPR, as well as VIA Rail Canada. Class II railways include those known variously as regional and shortline railways, while Class III railways encompass those activities that are principally confined to terminals or bridges.

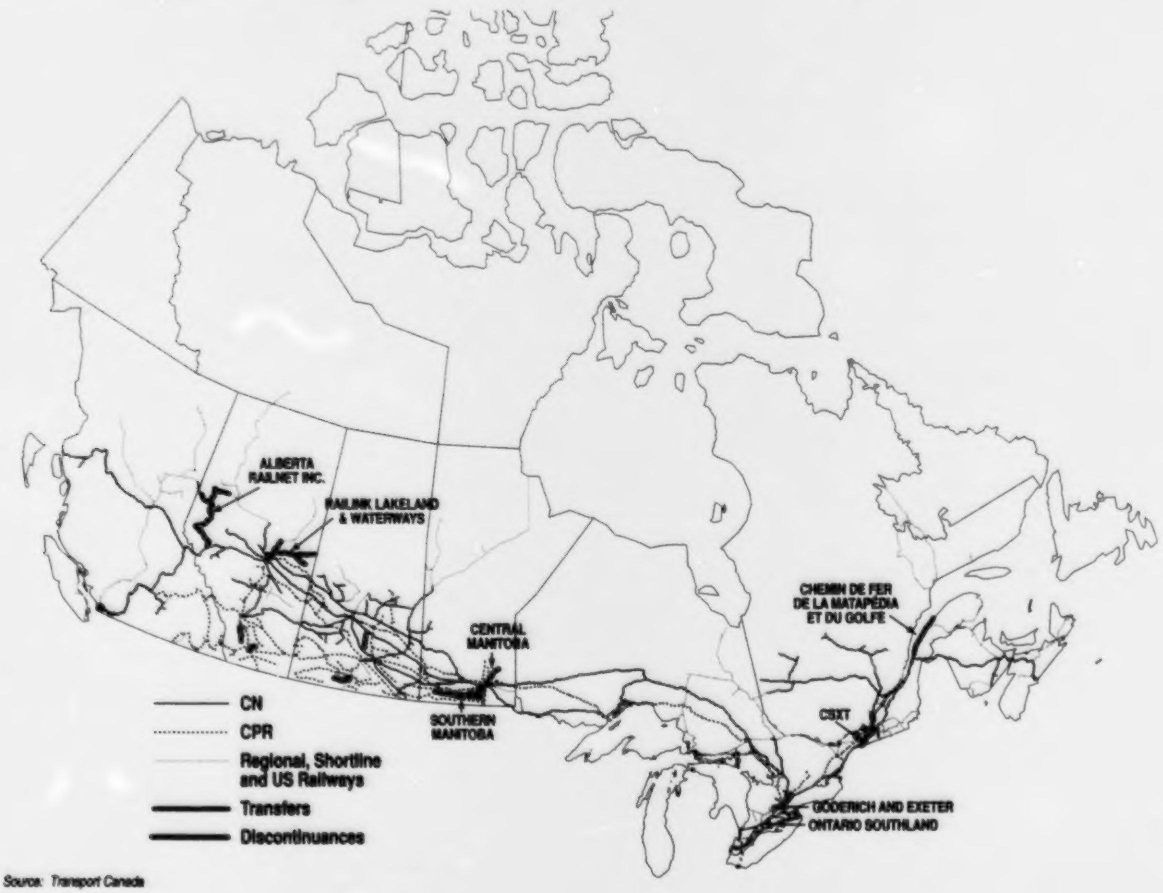
In addition to the transfer of lines to another carrier, occasionally a Class I carrier will create an "internal" shortline that simulates many of the features of an operation transferred to another carrier. The objectives are the same — to reduce costs and improve the revenue stream — but the assets remain the property of the same Class I carrier. Typically, special agreements are struck with labour to facilitate the development of these "internal" shortlines.

Discontinuances represent another, though less frequent, form of rationalization. Under the *Canada Transportation Act, 1996*, rail lines proposed for discontinuance must go through a statutory process of first being offered for sale to potential commercial operators, and, failing that, to levels of government. Only after all opportunities for continued commercial operation or transfers to governments have been exhausted, are railways permitted to discontinue services over a line.

During 1999, approximately 82 per cent of the 2,062 kilometres of track rationalized by CN and CPR were transferred to other operators. Only about 378 kilometres of line were discontinued in 1999, compared with 505 kilometres in 1998 and 955 kilometres in 1997. As shown in Table 10-2, which illustrates rationalization activity by province for 1999, CN had by far the greatest amount of transfer activity, as well as the greatest amount of rationalization activity in general.

In 1999, Alberta once again dominated rationalization activity, with over 50 per cent of discontinuances and transfers. As in 1998, transfers accounted for the bulk of rationalization activity in that province. During 1999, almost 55 per cent of line transfers to other operators

FIGURE 10-1: CHANGES IN CANADA'S RAIL NETWORK, 1999



Source: Transport Canada

TABLE 10-2: CN AND CPR RATIONALIZATION[1] BY PROVINCE, 1999

(Route-kilometres)

		B.C.	*ALTA.*	*SASK.*	*MAN.*	*ONT.*	*QUE.*	*N.B.*	*Total*
Discontinuances	CPR	0	110	104	0	0		0	214
	CN	0	0	143	0	5	15	0	163
	Total	0	110	248	0	5	15	0	378
Transfers	CPR	0	0	115	0	33	0	0	148
	CN	0	993	0	419	45	190	0	1,647
	Total	0	993	115	419	78	190	0	1,795

[1] Excludes spur kilometres.

Source: Transport Canada

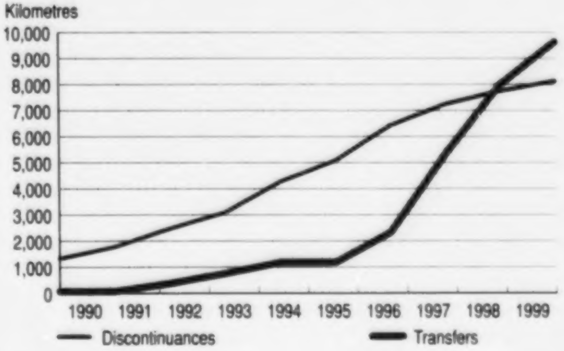
occurred in Alberta, while another 23 per cent took place in Manitoba. The large amount of track transferred in Alberta involved two carriers — one an existing RailLink[2] operating division and the other, Alberta RailNet Inc., a subsidiary of North American RailNet Inc. The higher proportion of rationalization activity in western Canada (85 per cent of all transfers and discontinuances) than in eastern Canada is not surprising, given that until recently, the western Canadian network was under an abandonment prohibition for many years.

While CN accounted for virtually all of the transfer activity in 1999, discontinuances were roughly similar for both carriers. Although the amount of trackage discontinued in 1999 was not large, two thirds of it was in Saskatchewan. Figure 10-1 illustrates the CN and CPR rationalization activity that occurred on the rail network in 1999 and, where applicable, the names of the new carriers to which the track was transferred.

The pace of rail line discontinuances continued to decline, with 1999 being the third consecutive year in which the amount of track discontinued fell. On the other hand, transfers continued to occur at a strong rate.

Figure 10-2 charts these two methods of rationalization in terms of cumulative activity over the past decade. During this period, cumulative transfers to other rail operators surpassed cumulative discontinuances of lines. The rate of transfers after 1996 was particularly dramatic.

FIGURE 10-2: CUMULATIVE CN AND CPR RATIONALIZATION, 1990 - 1999



Source: Transport Canada

Table 10-3 shows the provincial distribution of this rationalization activity over the same ten-year period. Ontario has experienced the greatest amount of rail line discontinuance with approximately 22 per cent of total Canadian trackage discontinued. Close behind is Saskatchewan at 20 per cent. During this decade, 25 per cent of all the track transferred to other operators occurred in Alberta, while Manitoba, Ontario and Quebec each accounted for about 18 per cent. Ontario, Alberta and Quebec experienced similar amounts of total rationalization activity, with approximately 18 per cent of overall activity.

TABLE 10-3: CN AND CPR RATIONALIZATION BY PROVINCE, 1990 - 1999

(Route-kilometres)

		British Columbia	*Alberta*	*Saskatchewan*	*Manitoba*	*Ontario*	*Quebec*	*New Brunswick*	*Nova Scotia*	*Territories*	*Total*
Discontinuances	CPR	510	585	966	137	394	786	429	242	0	4,049
	CN	5	216	672	847	1,428	514	79	227	87	4,075
	Total	516	802	1,637	984	1,822	1,300	508	469	87	8,125
Transfers	CPR	365	216	150	0	827	765	191	85	0	2,599
	CN	0	2,225	544	1,730	799	1,010	328	378	122	7,136
	Total	365	2,440	694	1,730	1,625	1,776	519	463	122	9,735
Total	CPR	875	801	1,115	137	1,221	1,551	620	328	0	6,648
	CN	5	2,441	1,216	2,577	2,227	1,524	407	604	210	11,211
	Total	880	3,242	2,331	2,714	3,448	3,075	1,027	932	210	17,859

Source: Transport Canada

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[2] In 1999, RailLink was purchased by Rail America. For further details, see the "Structure of Transportation Industry" chapter of this report.

THREE-YEAR PLANS

Railways must make plans publicly available that indicate what discontinuances and transfers they plan to undertake over a three-year horizon. These plans are updated periodically. The most current plans for CN and CPR are dated November 30, 1999, and December 18, 1999, respectively.

In the remainder of their current three-year plans, CN and CPR have proposed to discontinue about 1,250 kilometres of track, of which 55 per cent is in Saskatchewan and almost 40 per cent is in Ontario. They have also proposed 1,150 kilometres of track for transfer, with about 35 per cent of this total in each of Ontario and Saskatchewan. Table 10-4 shows the amount of track proposed for discontinuance and transfer in the balance of the railways' current three-year plans.

TABLE 10-4: PROPOSED CN AND CPR RATIONALIZATION BY PROVINCE

(Route-kilometres)

		B.C.	*ALTA.*	*SASK.*	*MAN.*	*ONT.*	*QUE.*	*N.B.*	*Total*
Discontinuances	CPR	9	68	385	0	87	3	13	564
	CN	0	0	295	40	227	0	0	562
	Total	9	68	680	40	314	3	13	1,126
Transfers	CPR	0	0	407	112	176	39	0	734
	CN	168	0	0	0	123	0	0	292
	Total	168	0	407	112	299	39	0	1,025

Source: Transport Canada

In aggregate, approximately 45 per cent of all rationalization activity proposed for the balance of the railways' current three-year plans is expected to occur in Saskatchewan. A further 35 per cent is proposed for Ontario. The remaining provinces have relatively minor amounts of track to be rationalized and most of it is proposed for transfer.

The amount of track operated by CN and CPR, relative to the total network, has declined rapidly in recent years from a level that had been more or less stable at approximately 90 per cent for many years to less than 70 per cent now. It is expected that with the completion of their current three-year plans, CN and CPR will account for approximately 65 per cent of the network, while shortline and regional railways will account for the remainder.

ROAD TRANSPORTATION INFRASTRUCTURE

The 1997 and 1998 Transport Canada annual reports presented a breakdown by province and territory of the over 900,000 kilometres of Canadian roads and highways. Because it was not possible to obtain more recent information on the overall road system for this year, this report's emphasis is on the National Highway System (NHS) and traffic levels.

NATIONAL HIGHWAY SYSTEM

The National Highway System is a network of roads identified by the Council of Ministers Responsible for Transportation and Highway Safety during a multi-stage policy study launched in September 1987. The goals of this study were to identify future needs and define standards for a Canadian primary highway system of national significance; establish the benefits and costs of meeting these needs; and establish the necessary funding arrangements between governments.

A number of criteria were used to select highways for inclusion in the National Highway System. The highways had to be existing primary routes that provide interprovincial and international trade and travel by connecting (as directly as possible) a capital city or major provincial population or commercial centre in Canada with:

- another capital city or major population centre;
- a major point of entry or exit to the US highway network; or
- another transportation mode served directly by the highway mode.

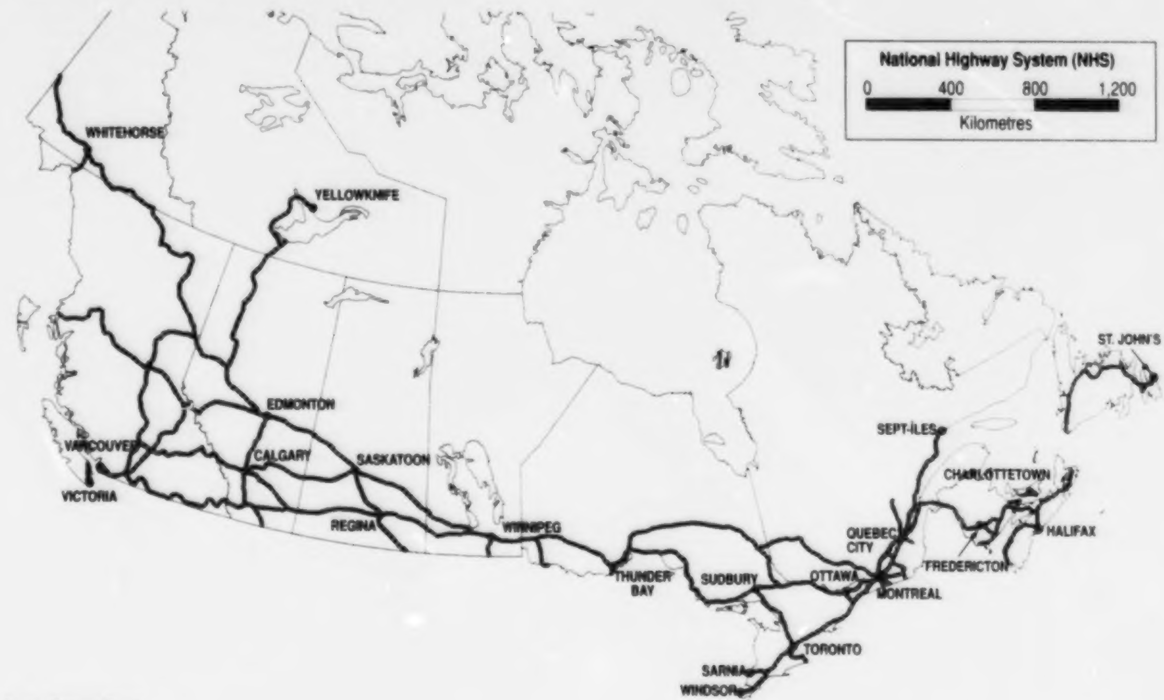
This defined principal highway network, which is illustrated in Figure 10-3, is nearly 24,500 kilometres in length.

TRAFFIC LEVELS

The National Highway System is a small percentage of the public road and street network in Canada. It is, however, heavily used, accounting for nearly one quarter of the total vehicle-kilometres driven. Table 10-5 illustrates vehicle traffic levels on the National Highway System by province for the years 1986, 1993 and 1996.

Nearly 80 billion vehicle-kilometres were generated in 1996, up almost nine per cent from 1993 and almost 40 per cent from 1986. This equates to a 3.3 per cent average annual growth rate in vehicle traffic for the period. In 1996, Ontario and Quebec together accounted for over

FIGURE 10-3: NATIONAL HIGHWAY SYSTEM


National Highway System (NHS)
0
400
800
1,200
Kilometres
WHITEHORSE
YELLOWKNIFE
EDMONTON
VANCOUVER
CALGARY
SASKATOON
VICTORIA
REGINA
WINNIPEG
THUNDER BAY
SUDBURY
OTTAWA
MONTREAL
QUEBEC CITY
TORONTO
SARNIA
WINDSOR
SEPT-ÎLES
CHARLOTTETOWN
HALIFAX
FREDERICTON
ST. JOHN'S

Source: Transport Canada

60 per cent of the total vehicle-kilometres on the National Highway System, with Ontario alone generating 36 per cent of the total and Quebec 25 per cent. These were the only two provinces to have a vehicle-kilometres' share greater than their share of the National Highway System network. The next heaviest travelled province was British Columbia, which generated 11 billion vehicle-kilometres in 1996, or 14 per cent of the total. This in turn was followed by Alberta at 8.4 billion, or nearly 11 per cent of the total travel. Saskatchewan represented nearly four per cent of total travel, followed by Nova Scotia with 3.4 per cent, New Brunswick with about three per cent, Manitoba with nearly two per cent, and Newfoundland and Prince Edward Island together with two per cent of the total.

TABLE 10-5: VEHICLE TRAFFIC LEVELS ON THE NATIONAL HIGHWAY SYSTEM, 1986, 1993 AND 1996

	Network length ('000s)	Vehicle-kilometres (billions)			AAGR[1] v-km 1986–1996	Percentage distribution				Annual Average Daily Traffic (AADT)		
						Network length	Vehicle-kilometres					
		1986	1993	1996			1986	1993	1996	1986	1993	1996
Newfoundland	0.9	0.7	0.8	1.3	6.7	3.9	1.2	1.0	1.7	2,000	2,200	3,800
Prince Edward Island	0.1	0.1	0.2	0.2	5.3	0.5	0.2	0.2	0.3	3,100	3,900	5,200
Nova Scotia	0.9	1.8	2.2	2.7	4.1	3.6	3.1	3.1	3.4	5,600	7,000	8,300
New Brunswick	1.0	2.0	2.2	2.3	1.5	4.1	3.5	3.0	2.9	5,500	6,100	6,400
Quebec	3.0	13.9	18.5	19.6	3.5	12.1	24.4	25.4	24.8	12,900	17,200	18,200
Ontario[2]	5.0	20.3	26.5	28.7	3.5	20.5	35.5	36.4	36.2	11,100	14,600	15,700
Manitoba	0.9	1.2	1.3	1.5	2.5	3.5	2.1	1.8	1.9	3,700	4,200	4,800
Saskatchewan	2.1	2.4	2.8	3.1	2.5	8.6	4.2	3.9	3.9	3,100	3,700	4,000
Alberta	3.5	6.3	7.6	8.4	3.0	14.5	10.9	10.4	10.7	4,900	5,900	6,500
British Columbia	5.4	8.3	10.5	11.0	2.8	22.0	14.6	14.4	13.9	4,300	5,400	5,600
Yukon	1.1	0.2	0.2	0.2	2.0	4.4	0.3	0.3	0.3	500	500	600
Northwest Territories	0.6	0.04	0.04	0.1	6.3	2.4	0.1	0.1	0.1	200	200	300
Canada	**24.4**	**57.3**	**72.9**	**79.2**	**3.3**	**100.0**	**100.0**	**100.0**	**100.0**	**6,400**	**8,200**	**8,900**

1 AAGR = Average Annual Growth Rate.
2 Data for Ontario for 1996 are estimated.

Source: Traffic information supplied by provincial/territorial highways departments

In terms of annual average daily traffic (AADT), Ontario's and Quebec's portions of the National Highway System were very heavily travelled, averaging over 15,000 vehicles per day in Ontario and over 18,000 vehicles per day in Quebec. The next busiest on average was Nova Scotia, with over 8,000 vehicles per day, followed by Alberta and New Brunswick each with 6,500 cars and trucks per day. The remaining provinces each averaged less than 6,000 vehicles per day on their particular sections of the National Highway System.

Figure 10-4 illustrates how substantially vehicle traffic varies by geographic location. Daily car and truck volumes are depicted in two ways in this figure: traffic ranges and traffic bands. In traffic ranges, a particular shade of gray is assigned to a defined traffic interval (i.e. black represents road sections having less than 5,000 vehicles per day). In traffic bands, line thickness is proportional to the level of traffic passing over a section of road.

Vehicle traffic is heavily concentrated around major urban areas in Canada, especially Toronto, Montreal and Vancouver, and is distributed heavily along a few highway corridors. The busiest corridor in Canada is the Highway 401–Autoroute 20 corridor running from Quebec City to Windsor. Traffic levels routinely average over 30,000 vehicles per day and rise significantly in and around Toronto and Montreal. Traffic through some sections of Highway 40 in the Montreal core exceeds 150,000 vehicles per day, while traffic on some sections of Highway 401 passing through the Toronto area is more than twice as busy, exceeding 400,000 vehicles per day in some places.

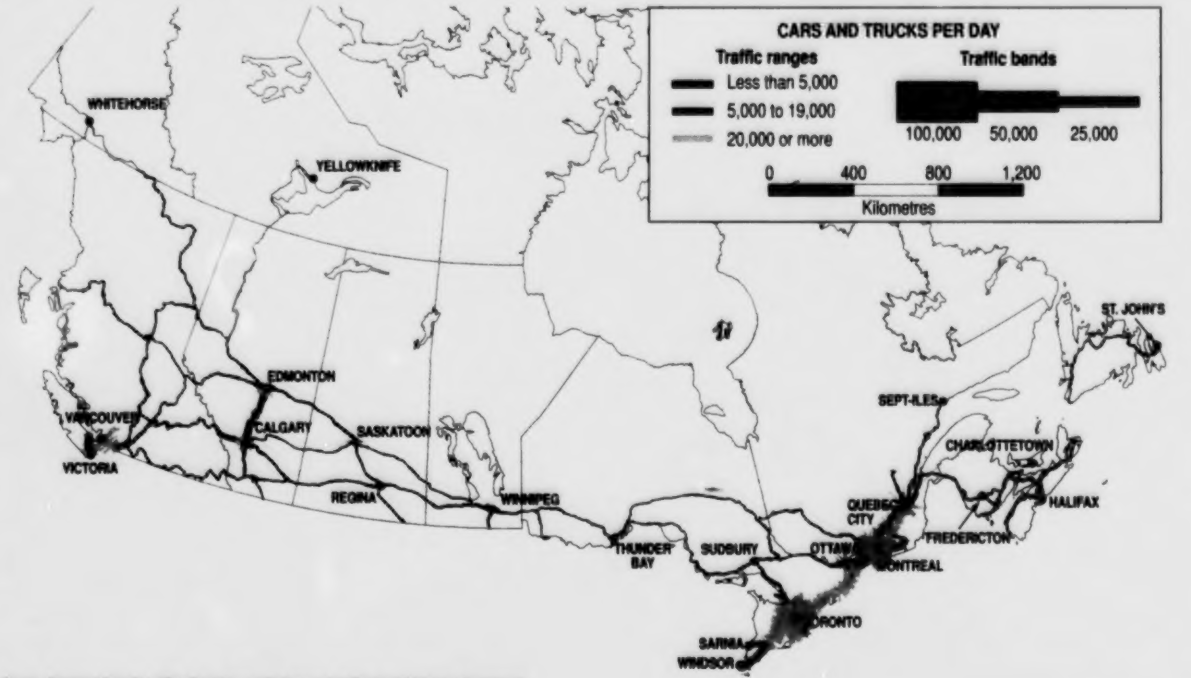
The busiest corridor outside central Canada is a portion of the Trans-Canada Highway in the lower mainland of British Columbia running from Chilliwack to Vancouver. Traffic exceeds 50,000 vehicles per day over many sections of this road and exceeds 120,000 per day in the Greater Vancouver Area.

The next busiest corridor is Highway 2 running between Calgary and Edmonton. Traffic levels average almost 15,000 vehicles per day over this 300-kilometre stretch of highway. The most heavily travelled corridor in Atlantic Canada is Highway 102 between Truro and Halifax. Average daily traffic volumes exceed 15,000 vehicles over most sections of this highway.

TRAFFIC BETWEEN CANADA AND THE UNITED STATES

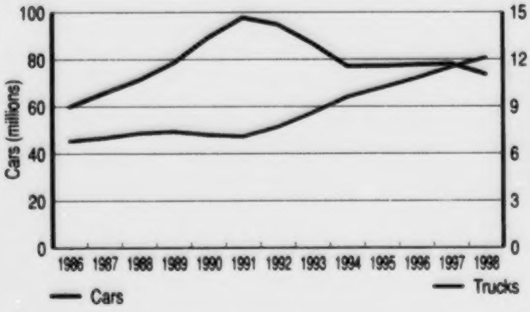
Since the mid-1980s, vehicle traffic between Canada and the US has been characterized by two distinct trends in car and truck movements. As Figure 10-5 shows, car traffic

FIGURE 10-4: NATIONAL HIGHWAY SYSTEM DAILY VEHICLE LEVELS,1996


CARS AND TRUCKS PER DAY
Traffic ranges
Less than 5,000
5,000 to 19,000
20,000 or more
Traffic bands
100,000
50,000
25,000
0
400
800
1,200
Kilometres
WHITEHORSE
YELLOWKNIFE
EDMONTON
VANCOUVER
CALGARY
SASKATOON
VICTORIA
REGINA
WINNIPEG
THUNDER BAY
SUDBURY
OTTAWA
MONTREAL
QUEBEC CITY
SEPT-ILES
CHARLOTTETOWN
FREDERICTON
HALIFAX
ST. JOHN'S
TORONTO
SARNIA
WINDSOR

Source: Transport Canada, traffic information supplied by provincial/territorial highways departments grew strongly during the late 1980s, peaking at 100 million two-way movements in 1991, but has since declined, levelling off during the mid-1990s. Many of these fluctuations can be attributed to variations in the value of the Canadian dollar relative to the American dollar. During the late 1980s, for example, substantial appreciation in the Canadian dollar touched off unprecedented crossborder shopping activity by Canadians, increasing the number of trips across the border by over 60 per cent between 1986 and 1991.

FIGURE 10-5: ANNUAL TWO-WAY VEHICLE TRAFFIC BETWEEN CANADA AND THE US, 1986 – 1998



Source: Statistics Canada, International Travel section

With the onset of a serious recession during the early 1990s, compounded by the depreciation of the Canadian dollar, car traffic fell below 80 million movements a year and stabilized at approximately 77 million crossings during the mid-1990s. In 1998, car movements fell appreciably for the first time since 1994 to 74 million movements, approximately two million trips more than the 1988 level.

In contrast, truck traffic grew markedly during the 1990s. Throughout the 1980s, truck movements were relatively stable at about seven million two-way movements a year. Since the coming into force of the Canada–US Free Trade Agreement in 1991 and the North American Free Trade Agreement in 1994, however, truck volumes have surged, rising at an average annual rate of nearly seven per cent to the current level of about 12 million crossings each year.

Crossborder traffic is heavily concentrated among a small number of sites. As Table 10-6 shows, from 1997 to 1998, almost 90 per cent of total truck movements passed through 20 border-crossing sites. For the same period, these 20 busiest crossings accounted for over 70 per cent of total vehicle movements. Four of the busiest truck crossings were located in Ontario: the Ambassador Bridge in Windsor, the Peace Bridge in Fort Erie, the Blue Water Bridge in Sarnia, and the Queenston Bridge in Niagara Falls. These top four truck crossings alone handled 6.6 million trucks in 1998, or 54 per cent of the total truck traffic. British Columbia and Quebec each had four crossings in the top 20, with their busiest crossings, Pacific Highway and Lacolle, respectively, rounding out the top six crossings. New Brunswick had two crossings in the top 20, while the Prairie Provinces each had one.

TABLE 10-6: ANNUAL VEHICLE TRAFFIC AT MAJOR BORDER CROSSINGS, 1997 – 1998

		Annual two-way traffic volumes (millions)						*Distribution (per cent)*			
		Trucks			*All vehicles*			*Trucks*		*All vehicles*	
Crossing	*Province*	*1997*	*1998*	*Rank*	*1997*	*1998*	*Rank*	*1997*	*1998*	*1997*	*1998*
Ambassador Bridge	Ontario	2.7	3.0	1	10.9	11.7	1	23.5	24.7	12.1	13.6
Peace Bridge	Ontario	1.3	1.4	2	7.7	7.6	3	11.7	11.7	8.6	8.9
Blue Water Bridge	Ontario	1.2	1.3	3	5.1	5.1	5	10.4	10.6	5.7	6.0
Queenston Bridge	Ontario	0.9	0.9	4	4.6	4.4	6	7.4	7.4	5.1	5.2
Pacific Highway	British Columbia	0.8	0.8	5	8.7	7.2	4	6.9	6.5	9.8	8.4
Lacolle	Quebec	0.7	0.8	6	2.7	2.6	9	5.8	6.5	3.0	3.1
Lansdowne	Ontario	0.4	0.4	7	1.5	1.6	15	3.5	3.6	1.7	1.9
Emerson	Manitoba	0.3	0.3	8	0.7	0.8	21	2.5	2.7	0.8	0.9
Philipsburg	Quebec	0.2	0.3	9	1.0	1.0	18	2.1	2.1	1.2	1.2
Windsor Tunnel	Ontario	0.3	0.2	10	9.0	9.4	2	2.2	2.0	10.0	11.0
Rock Island	Quebec	0.2	0.2	11	1.5	1.3	17	1.8	1.8	1.6	1.6
Coutts	Alberta	0.2	0.2	12	0.6	0.6	27	1.7	1.7	0.7	0.7
Sault Ste. Marie	Ontario	0.1	0.1	13	3.0	2.7	8	1.1	1.2	3.3	3.1
North Portal	Saskatchewan	0.1	0.1	14	0.3	0.3	35	1.2	1.2	0.4	0.4
Woodstock	New Brunswick	0.1	0.1	15	0.8	0.7	23	1.1	1.1	0.9	0.8
Armstrong	Quebec	0.1	0.1	16	0.3	0.3	34	1.2	1.0	0.4	0.4
Huntingdon	British Columbia	0.1	0.1	17	2.2	1.8	12	1.1	1.0	2.5	2.1
Aldergrove	British Columbia	0.1	0.1	18	1.7	1.4	16	0.8	0.9	1.9	1.6
Milltown	New Brunswick	0.1	0.1	19	0.9	0.8	20	0.9	0.7	1.0	0.9
Kingsgate	British Columbia	0.1	0.1	20	0.3	0.2	37	0.7	0.7	0.3	0.3
Top-20 (ranked by trucks)		10.1	10.8		63.5	61.7		87.9	88.9	70.9	71.9
Total		11.5	12.1		89.6	85.7					

Source: Statistics Canada, International Travel section

MARINE TRANSPORTATION INFRASTRUCTURE

PORTS

Canada's major ports play a significant role in Canada's transportation system. Vancouver is Canada's largest port and the main terminal for goods being shipped to the Asia–Pacific region. The Port of Prince Rupert, located just below the Alaskan Panhandle, has the shortest sailing distance from North America to Pacific Rim countries. In the east, shipments are divided among several ports, including Montreal, Halifax, Port Cartier, Sept-Îles, Saint John and Quebec City.

Despite the cold climate in winter, many of Canada's deep-water ports are open year-round. The infrastructure that supports the port system includes marine terminals with modern container facilities that connect with container trains, which move goods throughout North America. Port authorities operate some of these marine terminals, but often they are owned and operated by independent companies that rent space from the port.

THE PORT SYSTEM

Over the past number of years, the federal government has been working to reengineer Canada's marine transportation system. As part of these efforts, the National Marine Policy, announced in December 1995, set out the government's intention to bring more commercial discipline to the marine sector to improve efficiency and give local regions more control over their ports. The commercialization of the St. Lawrence Seaway is an important part of this policy.

The *Canada Marine Act* (CMA), which received Royal Assent on June 11, 1998, enabled Transport Canada to implement the National Marine Policy. The policy called for three categories of ports: independently managed Canada Port Authorities (CPAs), regional and local ports, and remote ports.

Canada Port Authorities are self-sufficient ports that have been deemed essential to domestic and international trade. As a group, they make up the National Ports System and include ports that were formerly Ports Canada local port corporations, major Canada Ports Corporation divisional ports, and most harbour commissions.

To date, 17 of the 18 ports designated to become Canada Port Authorities have received their CPA status and have established their boards of directors:

- Halifax, Montreal, and Vancouver on March 1, 1999
- Fraser River, Prince Rupert, Quebec City, Saguenay, Saint John, Sept-Îles, St. John's and Trois-Rivières on May 1, 1999
- Toronto on June 8, 1999
- Nanaimo, North Fraser, Port Alberni, Thunder Bay, and Windsor on July 1, 1999.

The Port of Hamilton, the only designated port left to be established as a Canada Port Authority, will receive CPA status when it completes the letters patent process. In addition to the original 18 ports listed in the *Canada Marine Act*, Transport Canada has received applications for CPA status from two other ports — Belledune and Oshawa. Their letters patent are under development.

The Canada Ports Corporation is targetted for dissolution in 2000. The corporation has been kept open with minimal staff during the implementation phase of the National Ports System to ensure that all ports have been either transferred to Canada Port Authority status or divested to local interests.

On March 1, 1999, Part II of the *Canada Marine Act* came into force for existing public ports, which consolidated regional and local ports with other public ports. This category includes Transport Canada facilities that are not deemed to be remote facilities, as well as any Canada Ports Corporation facilities or harbour commissions not incorporated as Canada Port Authorities.

Regional and local ports are being offered to other federal departments or to provincial governments, municipal authorities, community organizations or private interest groups. As Table 10-7 shows, Transport Canada has divested a total of 357 public ports since 1996. These ports were either transferred, deproclaimed or demolished, or had Transport Canada's interests terminated. The largest transfer of ports took place in 1996, with the devolution of 277 ports. In 1999, 35 facilities were divested, while 1998 and 1997 saw the devolution of 11 and 34 ports, respectively.

Table 10-7 summarizes the changes that have taken place in responsibility for ports' operations since 1996.

TABLE 10-7: PORTS NO LONGER UNDER THE ADMINISTRATION OF TRANSPORT CANADA, 1996 – 1999

Year	*Transferred*	*Deproclaimed*	*Demolished/ Closed*	*TC Interests Terminated*	*Total*
1996	78	199	0	0	277
1997	32	0	2	0	34
1998	10	0	0	1	11
1999	11	12	2	10	35

Note: Numbers include remote ports and sites where harbour beds have not yet been divested.

Source: Transport Canada

As of December 31, 1999, a total of 192 regional, local and remote ports remain under federal control. Table 10-8 summarizes the regional distribution of the ports administered by Transport Canada from 1995 to 1999. The federal government will continue to maintain remote ports that serve the basic transportation needs of isolated communities unless local interests express a willingness to assume ownership of such port facilities. While 26 remote ports were divested in 1996 and 1997, there have been no further divestitures of remote ports since then. Transport Canada continues to administer 34 remote ports in Quebec, Ontario, Manitoba and British Columbia. A growing number of "other" ports are being operated by provincial or municipal governments and private interests as Transport Canada divests itself of its facilities.

TABLE 10-8: STATUS OF TRANSPORT CANADA'S PORTS BY PROVINCE AND YEAR, 1996 – 1999

(Transport Canada Administered Public Port Sites)[1]

Province	*1995*[2]	*1996*	*1997*	*1998*	*1999*
Newfoundland	58	40	20	19	18
New Brunswick	45	9	7	6	3
Nova Scotia	128	35	35	31	18
Prince Edward Island	31	4	4	4	4
Quebec	73	48	46	46	45
Ontario	54	37	30	25	20
Manitoba	2	2	2	2	2
Saskatchewan	4	4	4	4	4
Alberta	3	1	1	1	1
British Columbia	105	92	89	89	77
Northwest Territories	46	0	0	0	0
Total	549	272	238	227	192

1 Numbers include remote ports.
2 Last year prior to the National Marine Policy.

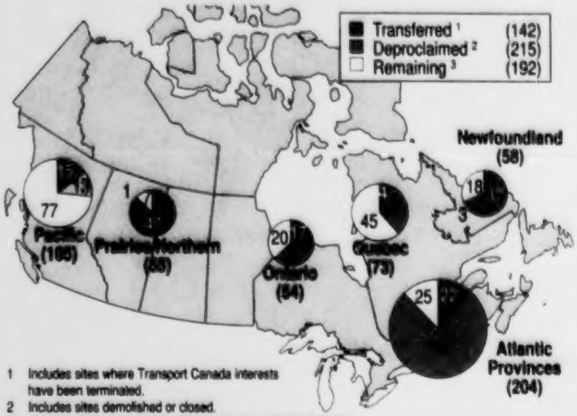
Source: Transport Canada

At the end of 1999, there were 108 other ports, including 57 private, 33 provincial and 18 municipal ports. These ports vary both in terms of size and activity. They include sites such as Port Cartier, Quebec, used to ship large volumes of cargo and Quyon, Quebec, which is used for an interprovincial ferry service on the Ottawa River. This category of ports has been growing as facilities have been transferred under the National Marine Policy.

Figure 10-6 shows the divestiture status of regional, local and remote ports, highlighting those that have been transferred or deproclaimed, as well as the number of ports yet to be divested.

Audited financial statements for 1999 are not yet available. As a result, the following financial results for 1998 are provided for Ports Canada ports, Harbour Commissions and Transport Canada facilities not divested prior to December 31, 1998.

FIGURE 10-6: DIVESTITURE STATUS OF REGIONAL, LOCAL AND REMOTE PORTS



1 Includes sites where Transport Canada interests have been terminated.
2 Includes sites demolished or closed.
3 Includes sites where harbour beds have not yet been divested.

Source: Transport Canada

Ports Canada[3]

In 1998, Ports Canada posted total revenues of $231 million, with a net income of $20 million and operating cash flows of $62 million. The seven major ports handled 83 per cent of the volume and generated roughly 77 per cent of the total revenues of Ports Canada ports

Table 10-9 shows 1998 revenues, expenses and some key ratios for Ports Canada ports and for divisional ports as a whole.

The overall operating ratio for Ports Canada ports was 75 per cent in 1998. Taken together, the major ports had a ratio of 81 per cent, with individual ratios ranging from 70 to 95 per cent. Except for Vancouver and Halifax, ratios for all major ports were above 80 per cent. For divisional ports, the operating ratio as a whole was 56 per cent.

The return on assets for Ports Canada ports was two per cent in 1998. Montreal had the highest return on assets, at eight per cent, with its investment income almost as large as its operating income. Taken together, the major ports' return was one per cent, compared with ten per cent for divisional ports.

While revenues at major ports declined three per cent in 1998 from that reported in 1997, operating expenses have also declined by six per cent. It is noted, however, that approximately one-half of these reductions are as a result of the new financial statement format adopted by the

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[3] In subsequent annual reports, the information presented here will be reported by Canada Port Authorities (CPAs). Given that the most recent year for which the information is reported in this report is 1998, and that most CPAs were created in 1999, a breakdown by CPA will be presented in Transport Canada's 2000 annual report.

TABLE 10-9: FINANCIAL PROFILE, PORTS CANADA PORTS,1998

(Millions of dollars)

Item	*Vancouver*	*Montreal*	*Halifax*	*Quebec City*	*Saint John*	*St. John's*	*Prince Rupert*	*Divisional Ports*[1]	*Total All Ports*
Operating Revenues	73.4	57.1	14.1	13.1	11.2	3.0	7.2	52.2	231.4
Operating Expenses	51.1	50.4	11.0	12.3	9.9	2.7	6.8	29.4	173.7
Operating Income	22.4	6.7	3.1	0.8	1.3	0.3	0.4	22.8	57.7
Ratio: Expenses/Revenues (per cent)	**70**	**88**	**78**	**94**	**89**	**91**	**95**	**56**	**75**
Net Income	0.4	13.0	3.0	(10.6)	1.9	0.6	0.8	11.0	20.1
Net Fixed Assets	415.0	165.3	78.1	37.1	57.6	11.6	94.9	110.6	970.3
Ratio: Net Income/Net fixed assets (per cent)	**0**	**8**	**4**	**(29)**	**3**	**5**	**1**	**10**	**2**
Funds from Operations	17.0	24.3	6.2	0.7	1.6	1.3	2.8	8.2	62.2
Investment Income	4.3	6.3	0.1	1.5	0.7	0.3	0.4	6.0	19.7
Total Assets	444.2	269.1	87.6	81.5	71.2	18.9	104.9	284.1	1,361.4
Net Capital Expenditures	10.3	18.1	18.2	1.0	2.3	0.8	4.5	7.0	62.2
Retained Earnings	213.2	96.3	22.5	(9.4)	5.5	7.7	19.2	(125.7)	229.2
Contributed Capital	150.3	153.9	50.9	66.3	61.7	10.1	84.6	56.8	634.5

Note: Due to rounding, columns may not add to totals shown.

1 Ridley Terminals is included in Divisional Ports, yet is operated independently of Divisional Ports.

Source: Annual Reports

Prince Rupert Port Corporation in 1998 whereby only direct revenues are reflected in revenues earned by the Corporation. In prior years, revenues realized by the terminal operator were included in operating revenues. Despite this revision, revenues earned at major ports have increased five per cent over the five-year period, while operating costs have declined by four per cent over the same period.

At the divisional ports, operating revenues and operating expenses have decreased by 12 per cent and eight per cent respectively from 1997, or 14 per cent and 13 per cent respectively over the five-year period. Overall, the operating ratio for all ports remained relatively equal to that reported in 1997, with a four per cent improvement over the five-year period.

Total 1998 net income of all ports, major and divisional, has more than doubled, moving from $9.2 million in 1994 to $20.1 million in 1998. These financial changes occurred as traffic volumes increased by one per cent between 1994 and 1998. During this period, revenue per tonne remained relatively stable at $1.29. Expenses per tonne, however, dropped from $1.04 in 1994 to $0.97 in 1998, a decrease of almost seven per cent.

Table 10-10 shows revenues, expenses and incomes for all Ports Canada ports from 1994 to 1998.

TABLE 10-10: FINANCIAL RESULTS OF MAJOR AND DIVISIONAL PORTS, 1994 – 1998

(Millions of dollars)

		Revenues	*Expenses*	*Operating Income*	*Ratio*	*Net Income*	*Net Income/ Net Fixed Assets*
Major Ports	1994	170.7	149.8	20.9	0.88	3.8	0.00
	1995	169.8	148.3	21.4	0.87	24.3	0.03
	1996	175.9	143.3	32.9	0.81	18.3	0.02
	1997	184.9	153.4	31.5	0.83	25.7	0.03
	1998	179.2	144.3	34.9	0.81	9.1	0.01
Divisional Ports	1994	60.8	33.8	27.0	0.56	5.3	0.05
	1995	60.1	33.9	26.2	0.56	11.3	0.11
	1996	59.0	33.3	25.8	0.56	13.2	0.12
	1997	59.6	32.0	27.6	0.54	8.8	0.08
	1998	52.2	29.4	22.8	0.56	11.0	0.10
Total All Ports	1994	231.5	183.7	47.9	0.79	9.2	0.01
	1995	229.9	182.3	47.6	0.79	35.6	0.04
	1996	235.0	176.6	58.7	0.75	31.5	0.03
	1997	244.5	185.4	59.1	0.76	34.5	0.04
	1998	231.4	173.7	57.7	0.75	20.1	0.02

Notes: Due to rounding, columns may not add to totals shown.
With the exception of ratios, the measurement unit is millions of dollars.

Source: Annual Reports

Harbour Commissions

With the exception of Toronto, all harbour commissions reported close to positive net incomes in 1998. The Fraser and Hamilton harbour commissions posted the largest net incomes at $1.3 and $2.4 million, respectively. Total revenues were $55.8 million and expenses were $53.3 million, creating an operating ratio of about 96 per cent. Net income of $8 million provided a return on total assets of 2.1 per cent.

The financial data for harbour commissions between 1993 and 1998[4] shows that both revenues and expenses increased during the period. Expenses grew by five per cent, revenues by two per cent. As a result, operating income declined from $4 million to $2.5 million during the period, although the operating ratio deteriorated from 93 to 96 per cent.

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[4] As of 1995, all harbour commissions operated on a calendar-year basis (January to December). Prior to this, the Toronto Harbour Commission operated on a fiscal-year basis (April to March).

TABLE 10-11: HARBOUR COMMISSIONS FINANCIAL RESULTS,1998

(Millions of dollars)

Item	*Port Alberni*	*Fraser*	*Hamilton*	*Nanaimo*	*North Fraser*	*Oshawa*	*Thunder Bay*	*Toronto*	*Windsor*	*Sum of all Harbour Commissions*
Operating Revenues	3.0	11.5	12.6	5.5	4.5	0.7	2.8	13.6	1.6	55.8
Operating Expenses	3.2	10.2	10.2	5.8	4.3	0.8	2.3	15.7	0.9	53.3
Operating Income	(0.2)	1.3	2.4	(0.2)	0.1	(0.1)	0.5	(2.1)	0.7	2.5
Ratio: Expenses/Revenues (per cent)	**106.6**	**88.7**	**80.7**	**103.9**	**96.9**	**114.4**	**83.0**	**115.3**	**55.5**	**95.6**
Net Income	0.1	2.3	3.1	0.2	0.3	0.3	1.1	(0.2)	0.8	8.0
Total Assets	16.2	123.9	78.6	34.3	11.9	6.8	27.7	67.3	8.6	375.3
Ratio: Net Income/Total assets (per cent)	**0.8**	**1.9**	**3.9**	**0.6**	**2.2**	**4.4**	**3.8**	**0.3**	**9.8**	**2.1**

Source: Transport Canada

Traffic volume was 44.1 million tonnes in 1998. Tonnage handled at harbour commission ports rose by 15 per cent over the five years between 1993 and 1998 (with year-to-year fluctuations). Comparing 1998 with 1993, revenues and expenses expressed on a per-tonne basis were about 11 per cent and eight per cent lower, respectively. Net income also fell during this period.

Table 10-11 gives financial results for all harbour commissions for 1998.

Transport Canada Ports

Approximately 10 per cent of the ports remaining under Transport Canada's control generated 70 per cent of the total revenues in fiscal 1998/99. Gross revenues for the same year were $18.6 million, while expenses were $24.3 million. This left an operating revenue deficit of $5.7 million and an operating ratio of 131 per cent. Capital expenditures for the year were $4.1 million. An additional $1.3 million came from grants and contributions related to transfers associated with ports divestitures.

Revenues increased by 44 per cent during this time, but will decline as more ports are divested. This revenue rise is due to traffic growth and fee increases since 1994/95. Expenses fluctuated over this period but, like revenues, are expected to decline as more and more ports are divested.

Between 1993 and 1998, revenues per tonne have increased from $0.15 to $0.23, or by 53 per cent, while expenses per tonne[5] have remained relatively stable at approximately $0.31 per tonne.

Table 10-12 summarizes the financial details of ports and harbours remaining under Transport Canada's control from 1994/95 to 1998/99.

Port Traffic

The following preliminary data shows the traffic at some Canada Port Authorities in 1999:

TABLE 10-12: FINANCIAL RESULTS FOR TRANSPORT CANADA PORTS, 1994/95 – 1998/99

(Millions of dollars)

	1994 / 1995	*1995 / 1996*	*1996 / 1997*	*1997 / 1998*	*1998 / 1999*
Revenue[1]	12.9	17.1	20.3	20.7	18.6
Expenses[2]	28.7	33.6	28.5	27.4	24.3
Operating Income	(15.8)	(16.5)	(8.2)	(6.7)	(5.7)
Capital Expenditures	**23.1**	**11.3**	**11.9**	**1.9**	**4.1**
Grants and Contributions[3]		10.0	13.1	1.5	1.3
Ratio: Expenses/Revenues (per cent)	**222**	**196**	**140**	**132**	**131**

[1] This represents gross revenues.
[2] This represents operating and maintenance expenses including commissions.
[3] This item represents transfers related to the devolution of port facilities.

Source: Annual Reports and Transport Canada

- Halifax: almost 14 million tonnes; 107,837 cruise ship passengers
- Montreal: 20.6 million tonnes; 18,300 cruise ship passengers
- Nanaimo: 2.1 million tonnes
- Port Alberni: 1 million tonnes
- Prince Rupert: 8.9 million tonnes
- Quebec City: 16 million tonnes
- Saint John: 20 million tonnes
- Sept-Îles: 20.9 million tonnes
- Thunder Bay: almost 9 million tonnes
- Trois-Rivières: 2.2 million tonnes
- Vancouver: 71.2 million tonnes; 947,659 cruise ship passengers
- Windsor: 5.7 million tonnes

Port Traffic Statistics

Based on Statistics Canada data (available only up to 1998), Canada's ports handled a total of 376.1 million tonnes of cargo in 1998, almost the same quantity as in 1997.

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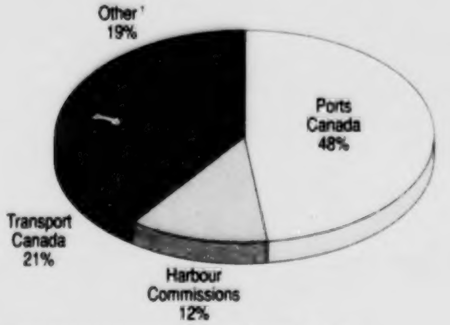
[5] Tonnage statistics include cargoes moved across private facilities within Transport Canada public harbours.

Figure 10-7 shows traffic shares by port groups for 1998.

FIGURE 10-7: TRAFFIC SHARES BY PORT GROUPS, 1998



[1] Includes DFO, provincial and municipal governments and private facilities.

Source: Transport Canada from data supplied by Statistics Canada

In 1998, Ports Canada ports handled the largest amount of traffic, with a 48 per cent share of the total. Harbour commissions' ports transported 12 per cent of total, while another 21 per cent of cargo was moved through Transport Canada facilities. The remaining 19 per cent was handled by other facilities, including those managed privately and those managed by or on behalf of the Department of Fisheries and Oceans and provincial and municipal governments.

From 1997 to 1998, the total amount of cargo handled at Ports Canada ports and Transport Canada facilities decreased by four per cent, while cargo handled at harbour commissions decreased by three per cent. Overall, the total tonnage of cargo moved through Canada's ports remained constant year over year, with increased traffic in "other" ports offset by equivalent tonnage decreases at Transport Canada facilities, Ports Canada ports and harbour commissions.

At those declared public ports where Transport Canada has no facilities and cargo is transported across private wharves, cargo shipped totalled 25.8 million tonnes, or 33 per cent of the total traffic handled by Transport Canada ports. In total, 73.6 million tonnes crossed "other" ports, of which Port Cartier handled the most at 19.3 million tonnes.

Table 10-13 gives details of tonnage handled by Canada's port system.

TABLE 10-13: TOTAL TONNAGE[1] HANDLED IN CANADA'S PORT SYSTEM, 1997 – 1998

(Thousands of tonnes)

Port System	*1997 Total*	*1998 Total*	*Per cent Change*
Ports Canada	187,279	179,357	(4)
Harbour Commissions	45,355	44,071	(3)
Transport Canada	82,237	79,024	(4)
Other	61,536	73,611	20
Total	**376,407**	**376,063**	**0**

[1] Tonnage statistics include cargos shipped across private facilities.

Source: Transport Canada from data supplied by Statistics Canada

Small Craft Harbours

The Department of Fisheries and Oceans (DFO) administers harbours used for commercial and recreational boating under the *Fishing and Recreational Harbours Act*. DFO is divesting all recreational harbours under its responsibility, as well as derelict and low-activity fishing harbours. All facilities essential to the fishing industry will remain the property of the federal government to ensure that these sites preserve their commercial status and that they continue to provide services to communities. Over the last decade, DFO has encouraged the creation of local non-profit organizations known as Harbour Authorities to take over the management of commercial fishing harbour facilities, as well as to assure the maintenance of the sites and to provide services to users. It should be noted that DFO will retain only those fishing harbours managed by a Harbour Authority.

Fishing Harbours

As of the end of January 2000, a total of 1,070 fishing harbours were still in the Department of Fisheries and Oceans' inventory, a decrease of 17.1 per cent from 1994. Harbour Authorities currently manage 51 per cent of these harbours. By 2003, however, approximately 750 are expected to be managed by Harbour Authorities, while another 300 derelict and low-activity harbours will be divested. It should be noted that 13 per cent of the remaining small craft harbours are classified as derelict (sites in a state of disrepair with no activity, which are slated for demolition).

Table 10-14 reports the fishing harbours remaining under DFO's responsibility as of January 2000, by region and type of management.

TABLE 10-14: FISHING HARBOURS BY HARBOUR TYPE AND REGION, JANUARY 2000

Region	*Harbour Authorities*	*Small Craft Harbours*	*Total by Region*
British Columbia and Yukon[1]	52	107	159
Prairies and Territories[1]	15	37	52
Ontario	5	9	14
Quebec	51	36	87
Maritimes	260	125	385
Newfoundland and Labrador	164	209	373
Total	**547**	**523**	**1,070**

[1] There are no Harbour Authorities in Saskatchewan, Northwest Territories, Nunavut and the Yukon.

Source: Small Craft Harbours, Department of Fisheries and Oceans

Recreational Harbours

The Department of Fisheries and Oceans is also gradually divesting all recreational harbours. Under Program Review, the federal government committed to withdraw from programs whose function was seen to be more closely aligned with provincial, community or private-sector interests in tourism and local economic development than with federal priorities. The recreational facilities are transferred mostly to provincial and municipal entities for a nominal cost and with the assurance that the recipient will continue to operate the facility for its current purpose and, essentially, at its current level of operations for at least five years.

Prior to transfer, the Department of Fisheries and Oceans considers making essential repairs to transfer the installations in a safe and reasonable condition. The divestiture program is targetted to end in 2001. No additional funding was allocated for the divestiture of recreational harbours, and funds used are, in fact, diverted from the Fishing Harbour Program.

Divesting all recreational harbours will free up funds for the repair of core fishing harbours. Projected small craft harbour expenditures for fiscal year 1999/00 are about $59.8 million. Maintenance (minor and major capital) accounts for 82 per cent of expenses, while operations account for seven per cent. Salaries and contributions make up the remainder with nine and two per cent, respectively. Revenues earned from leases, licences, and berthage and wharfage dues are projected to drop by 30 per cent in 1999/00 as a consequence of the divestiture program. The largest decrease is expected to be observed in Ontario, with revenues declining by close to $450,000, or 31.4 per cent.

Tables 10-15, 10-16 and 10-17 summarize, by region, the status of the recreational harbour divestiture program, the recipients of harbours divested and the type of management of the remaining facilities in the Department of Fisheries and Oceans' inventory.

TABLE 10-15: RECREATIONAL HARBOURS DIVESTED BY REGION, 1995/96 – 1999/2000

Province	*1995/96*	*1996/97*	*1997/98*	*1998/99*	*Plans for 1999/ 2000*	*Remaining to be divested*	*Total by Region*
British Columbia and Yukon	8	1	25	13	13	5	65
Central and Arctic	8	50	89	63	66	171	447
Quebec	53	24	93	15	20	47	252
Maritimes	0	4	8	26	27	15	80
Newfoundland and Labrador	0	0	0	1	0	1	2
Total	**69**	**79**	**215**	**118**	**126**	**239**	**846**

Source: Small Craft Harbours, Department of Fisheries and Oceans

TABLE 10-16: RECIPIENTS OF DIVESTED RECREATIONAL HARBOURS, 1995/96 – 1999/2000

	Province	*Municipality*	*Private Sector*	*Other*[1]	*Total by Region*[2]
British Columbia and Yukon	51	0	0	0	51
Prairies and Territories	3	5	0	0	8
Ontario	16	162	18	28	224
Quebec	2	167	3	25	197
Maritimes	5	15	3	21	44
Newfoundland and Labrador	0	1	0	0	1
Total	**77**	**350**	**24**	**74**	**525**

1 "Other" in the context of the divestiture of recreational harbours refers to sites that have been transferred to local non-profit organizations, First Nations or other federal departments, as appropriate.

2 Number of harbours transferred as of January 28, 2000.

Source: Small Craft Harbours, Department of Fisheries and Oceans

TABLE 10-17: MANAGEMENT TYPE AT RECREATIONAL HARBOURS IN THE DEPARTMENT OF FISHERIES AND OCEANS' INVENTORY BY REGION

	Managed under lease[1]	*Small Craft Harbours*	*Total by Region*[2]
British Columbia & Yukon[3]	0	14	14
Prairies & Territories[3]	10	25	35
Ontario	133	47	180
Quebec	5	50	55
Maritimes	1	35	36
Newfoundland & Labrador	0	1	1
Total	**149**	**172**	**321**

1 By municipalities, local non-profit organizations, etc.

2 Remaining harbours in DFO inventory as of January 28, 2000

3 There are no Harbour Authorities in Saskatchewan, Northwest Territories, Nunavut and the Yukon

Source: Small Craft Harbours, Department of Fisheries and Oceans

ST. LAWRENCE SEAWAY

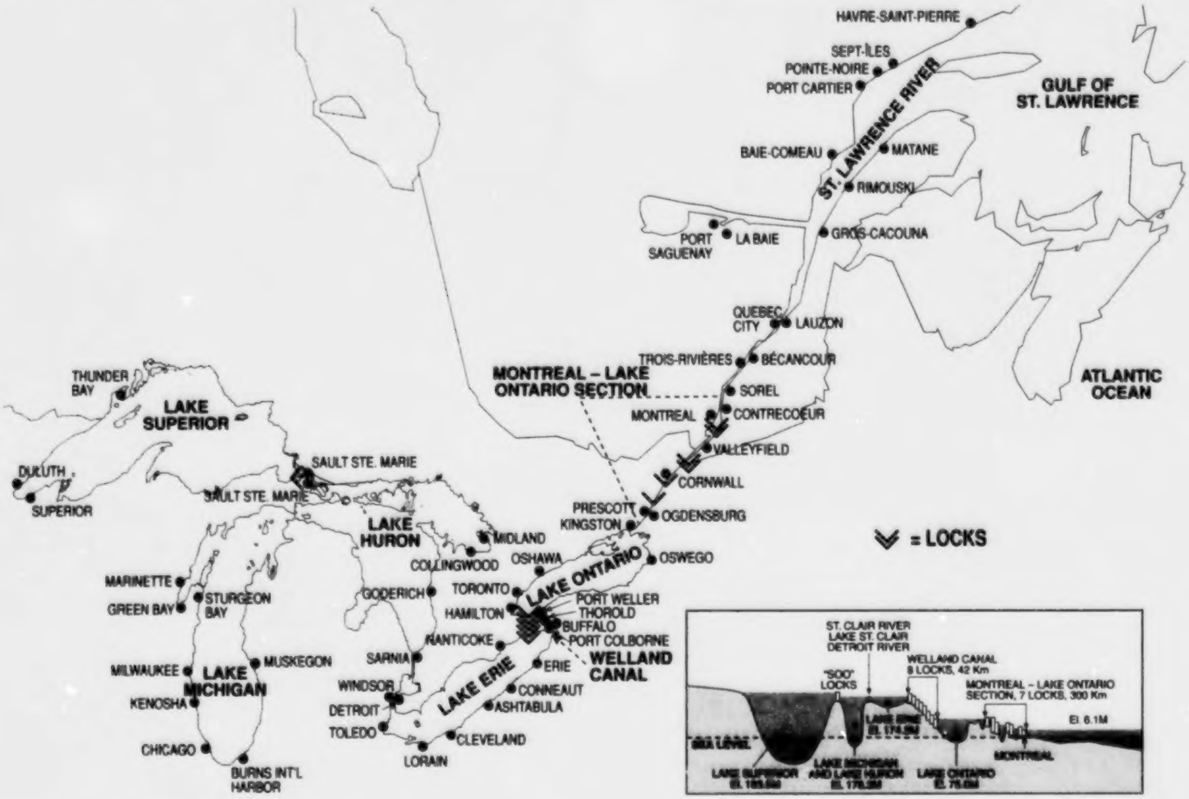
The St. Lawrence Seaway connecting the Port of Montreal and Lake Erie is a shared responsibility between Canada and the United States. Canada is responsible for the eight locks of the Welland Canal and five of the seven locks between Montreal and Lake Ontario, while the US Saint Lawrence Seaway Development Corporation (SLSDC) operates the remaining two locks.

The Seaway can accommodate vessels 225.5 metres in length, 23.8 metres in beam and eight metres in draft. As a ship travels west through the Seaway from the Port of Montreal, the locks eventually raise the ship the height of a 60-storey building above the water level at Montreal. Figure 10-8 shows the St. Lawrence Seaway system.

THE ST. LAWRENCE SEAWAY UNDER NEW MANAGEMENT

In 1999, the Canadian Seaway saw its first full year of management by the St. Lawrence Seaway Management Corporation (SLSMC). Management was handed to the

FIGURE 10-8: GREAT LAKES – ST. LAWRENCE SEAWAY SYSTEM


HAVRE-SAINT-PIERRE
SEPT-ÎLES
POINTE-NOIRE
PORT CARTIER
GULF OF ST. LAWRENCE
ST. LAWRENCE RIVER
BAIE-COMEAU
MATANE
RIMOUSKI
PORT SAGUENAY
LA BAIE
GROS-CACOUNA
QUEBEC CITY
LAUZON
TROIS-RIVIÈRES
BÉCANCOUR
MONTREAL – LAKE ONTARIO SECTION
SOREL
MONTREAL
CONTRECOEUR
VALLEYFIELD
CORNWALL
PRESCOTT
OGDENSBURG
KINGSTON
ATLANTIC OCEAN
THUNDER BAY
LAKE SUPERIOR
DULUTH
SUPERIOR
SAULT STE. MARIE
SAULT STE. MARIE
LAKE HURON
MIDLAND
COLLINGWOOD
OSHAWA
OSWEGO
= LOCKS
MARINETTE
GREEN BAY
STURGEON BAY
GODERICH
TORONTO
LAKE ONTARIO
PORT WELLER
THOROLD
HAMILTON
BUFFALO
NANTICOKE
PORT COLBORNE
MILWAUKEE
LAKE MICHIGAN
MUSKEGON
SARNIA
ERIE
WELLAND CANAL
KENOSHA
WINDSOR
DETROIT
LAKE ERIE
CONNEAUT
ASHTABULA
TOLEDO
CLEVELAND
CHICAGO
BURNS INT'L HARBOR
LORAIN
ST. CLAIR RIVER
LAKE ST. CLAIR
DETROIT RIVER
"SOO" LOCKS
WELLAND CANAL 8 LOCKS, 42 Km
MONTREAL – LAKE ONTARIO SECTION, 7 LOCKS, 300 Km
El. 6.1M
SEA LEVEL
LAKE ERIE
LAKE SUPERIOR
LAKE MICHIGAN AND LAKE HURON
LAKE ONTARIO
MONTREAL

Source: St. Lawrence Seaway Authority, Annual Report, 1997 - 1998

Corporation, a not-for-profit, private-sector organization controlled by Seaway users, on October 1, 1998.

In keeping with the introduction of commercial discipline to the Seaway, the Ottawa head office of the St. Lawrence Seaway Management Corporation was closed and services were merged with the Cornwall office. While the lands and fixed assets of the Seaway system remain the property of the Government of Canada, the corporation is responsible for its management, operation and maintenance (see text box). As part of the transfer agreement, the corporation assumed risks relating to cost and the federal government assumed risks relating to revenue.

One of the cornerstones of the Seaway agreement is a five-year business planning cycle. The first plan, now in effect, sets specific targets for operating and asset renewal costs, as well as anticipated revenues for the next five years.

TRAFFIC IN 1998

The total value of the 51.1 million tonnes of combined[6] cargo transported along the Seaway for the 1998 season was estimated at $7.5 billion, a 4.4 per cent increase in volume over the 49.0 million tonnes of traffic handled in 1997.

The main commodities moved along the Seaway are grain, iron ore, coal, other bulk and steel. They generally account for over 70 per cent of total cargoes. The success of the 1998 navigation season can be attributed to a substantial increase (more than 37 per cent) in shipments of general cargo, which includes steel slabs and other steel products, mostly from Europe. US grain movements also increased because of their link to steel imports (as a backhaul cargo). Movements of iron ore, coal and other bulk cargo, however, remained steady during 1998.

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[6] Combined for Montreal–Lake Ontario and Welland Canal sections.

As shown in Table 10-18, total traffic on the Montreal–Lake Ontario (MLO) section of the Seaway increased by about 6.4 per cent to 39.2 million tonnes, while total traffic on the Welland Canal section decreased by 0.6 per cent to 40.7 million tonnes.

There were 4,366 vessel transits in 1998, including 64 vessels that came into the system for the first time. The number of ocean vessel transits through the system grew by 28 per cent over 1997, from 1,122 to 1,438, corresponding to the high level of steel imports through the Seaway system in 1998.

TABLE 10-18: ST. LAWRENCE SEAWAY CARGO MOVEMENTS,[1] 1990 – 1998

(Thousands of tonnes)

	Montreal–Lake Ontario Section	*Welland Canal Section*
1990	36,656	39,398
1991	34,910	36,919
1992	31,360	33,174
1993	31,970	31,815
1994	38,422	39,703
1995	38,684	39,376
1996	38,075	41,145
1997	36,901	40,902
1998	39,246	40,657

[1] Combined traffic in the two sections of the Seaway.

Source: St. Lawrence Seaway Authority/St. Lawrence Seaway Management Corporation

PRELIMINARY DATA FOR 1999[7]

Cargo volume for the combined Welland Canal and Montreal–Lake Ontario sections of the system was about 47.6 million tonnes, or seven per cent lower than in 1998, largely because of reduced demand for steel imports.

In 1999, Canadian grain shipments increased by 7.6 per cent on the Montreal–Lake Ontario section and 2.7 per cent on the Welland Canal over 1998, to 6.0 and 5.8 million tonnes, respectively. American grain traffic also increased, by 5.5 per cent to 5.7 million tonnes on the Montreal–Lake Ontario section and by 3.8 per cent to 5.7 million tonnes on the Welland Canal section. Total grain traffic increased by 5.7 per cent on the Montreal– Lake Ontario section and by 2.5 per cent on the Welland Canal in 1999.

Iron ore shipments on the Montreal–Lake Ontario section were down only slightly to 10.0 million tonnes, while shipments on the Welland Canal section decreased 15.4 per cent to 5.3 million tonnes. This reflects a greater reliance by Canadian steel mills on iron ore originating from Quebec–Labrador.

THE MANAGEMENT, OPERATION AND MAINTENANCE AGREEMENT BETWEEN THE GOVERNMENT OF CANADA AND THE ST. LAWRENCE SEAWAY MANAGEMENT CORPORATION

The St. Lawrence Seaway Management Corporation was mandated to manage, operate and maintain the Seaway in accordance with a Management, Operation and Maintenance Agreement that requires the corporation to submit five-year business plans throughout the term of the agreement to the Minister of Transport. The business plan includes anticipated revenues and operating costs and an "Asset Renewal Plan." The corporation is authorized to charge tolls and other revenues to finance the operation and maintenance of the Seaway, and to recover from the Government of Canada such additional funds to eliminate operating deficits when required, in accordance with the terms of the agreement.

The agreement also provides for the formation of a "Capital Committee" made up of two representatives of the corporation and two representatives of the Crown. They will review the annual plan for the capital, maintenance and asset replacement requirements of the assets under the administration of the corporation and determine, if it is appropriate, whether any changes are warranted.

The corporation must meet cost targets for operations and asset renewal budgets, which have been negotiated with the government, as well as implement a two per cent annual toll increase for each of the first five years. If the corporation fails to meet cost targets, penalties in the form of higher toll increases may be imposed. If the corporation achieves better results than those required in the contract, it may increase tolls less than the base amount, or introduce an incentive toll program after year three.

Coal traffic remained close to its 1998 level. Traffic on the Welland Canal decreased by 1.3 per cent to 4.2 million tonnes. On the Montreal–Lake Ontario section, coal traffic recovered somewhat to 266,000 tonnes. In 1998, coal movements to New Brunswick facilities were lost to a South American source, resulting in a 343,000 tonne, or 64.2 per cent, decrease to 191,000 tonnes.

In 1999, general cargo traffic, largely iron and steel products, on the Montreal–Lake Ontario section registered a substantial decrease of 2.5 million tonnes, or 36.3 per cent, for a total of 4.3 million tonnes. General cargo traffic on the Welland Canal section registered a decrease of two million tonnes, or 37.7 per cent, for a total of 3.3 million tonnes. After a record year in 1998, the drop can be explained by a sharp decrease in imports of iron and steel products in 1999 as the US and Canada acted to curb alleged dumping of steel, as well as by large surpluses built up by US and Canadian importers.

Table 10-19 shows commodity movements on the St. Lawrence Seaway from 1990 to 1998.

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[7] Year-to-date data to the end of November 1999

TABLE 10-19: ST. LAWRENCE SEAWAY TRAFFIC[1] BY COMMODITY, 1990 – 1998

(Thousands of tonnes)

Year	*Grain*	*Iron Ore*	*Iron and Steel*	*Coal and Coke*	*Other*	*Total*
1990	12,718	12,581	4,128	7,365	11,615	48,407
1991	15,766	10,289	3,855	5,803	9,474	45,187
1992	12,415	10,056	3,607	6,021	10,237	42,336
1993	10,592	10,906	4,432	4,408	10,647	40,985
1994	12,464	12,625	7,019	4,528	12,255	48,891
1995	14,485	11,872	4,844	5,005	11,917	48,124
1996	12,158	13,362	6,056	5,460	12,903	49,939
1997	13,339	12,051	5,418	5,545	12,600	48,953
1998	12,483	12,117	7,182	5,510	13,839	51,131

Note:

[1] Combined traffic in the two sections of the Seaway.

Source: St. Lawrence Seaway Authority/St. Lawrence Seaway Management Corporation

RATES AND TARIFFS

In keeping with the terms of an agreement negotiated with Seaway users, a two per cent toll increase for the Canadian section of the Seaway was implemented on June 1, 1998. This was the first increase since 1993. A further two per cent toll increase was implemented in 1999.

As part of this commercialization agreement, a two per cent annual toll increase with no discounts/reductions was negotiated for 1998, 1999 and 2000. However, the agreement obliges the St. Lawrence Seaway Management Corporation to increase tolls beyond the two per cent level if it cannot achieve the cost targets set out in the business plan. Because the successful 1998 season allowed the corporation to meet and even exceed their targets, the toll increase for 2000 will remain at two per cent. In years four and five of the plan, toll discounts/reductions will be allowed if the corporation continues to exceed the business plan requirements.

FINANCIAL PROFILE

As a consequence of the transfer of the management of the Seaway to the corporation on October 1, 1998, the financial statements from October 1, 1998, to March 31, 1999, reflect only three months of operating revenues (October to December, as the Seaway closes for the months of January through March) and six months of expenses (October 1, 1998, to March 31, 1999). These expenses include the winter works program comprising the asset renewal and most of the major maintenance costs. Therefore, the financial results for the first six months of the corporation's existence are not representative of a full year's operation of the Seaway and are therefore not presented in this report. Furthermore, the financial results of the corporation will not be comparable to previous years' financial statements, as they exclude the revenues and expenses pertaining to the non-navigational assets, the income taxes relating to the St. Lawrence Seaway Authority, amortization expenses, as well as other expenses that are treated differently.

Table 10-20 shows the financial performance of the St. Lawrence Seaway from 1988/89 to 1997/98.

TABLE 10-20: ST. LAWRENCE SEAWAY FINANCIAL PERFORMANCE, 1988/89 – 1997/98

(Millions of dollars)

Year	*Operating Revenues*	*Operating Expenditures*	*Operating Income*	*Net Income*
1988/89	64.7	72.0	(7.3)	(1.9)
1989/90	64.5	75.5	(11.0)	(5.1)
1990/91	65.6	80.8	(15.2)	(9.9)
1991/92	65.4	76.8	(11.4)	(1.8)
1992/93	65.0	78.7	(13.7)	(11.0)
1993/94	69.6	78.0	(8.4	(6.1)
1994/95	83.9	74.1	9.9	15.5
1995/96	78.1	80.6	(2.4)	1.9
1996/97	83.4	80.1	3.3	0.2
1997/98	84.6	85.5	(1.0)	(3.7)

Source: St. Lawrence Seaway Authority, Annual Report

MARINE PILOTAGE

LEGISLATIVE FRAMEWORK

The *Pilotage Act* of 1972, as amended in 1998 by the *Canada Marine Act,* governs marine pilotage in Canada. Under this Act, four regional pilotage authorities were established — Atlantic (APA), Laurentian (LPA), Great Lakes (GLPA) and Pacific (PPA). Each authority is mandated to provide safe and efficient pilotage services that respond to the particular requirements of its traffic, as well as to the varied geography and climatic conditions of the waterways concerned. Although they are not considered agents of the Crown, all authorities report directly to the Minister of Transport.

MINISTERIAL REVIEW OF OUTSTANDING PILOTAGE ISSUES

In August 1998, the Minister of Transport asked the Canadian Transportation Agency (CTA) to conduct a forward-looking examination of the marine pilotage system in Canada (see boxed text).

The agency's report and the Minister's response were jointly tabled in Parliament in late November 1999. The four pilotage authorities have been asked to submit an implementation plan for the recommendations by May 2000.

THE CANADIAN TRANSPORTATION AGENCY'S MARINE PILOTAGE REVIEW

Section 157 of the *Canada Marine Act* (CMA), which came into force on October 1, 1998, contains a provision that amended the *Pilotage Act* of 1972 by adding a requirement for the Minister of Transport to further review the pilotage system. In keeping with this legislation, the Minister asked the Canadian Transportation Agency to conduct a review of the pilotage system in August 1998. The impetus for this review stemmed from the 1995 National Marine Policy, which recognized a need to further analyse some of the outstanding issues within the pilotage regime.

The review covered five distinct subject areas:
- pilot certification process for masters and officers
- training and licensing requirements for pilots
- compulsory pilotage area designations
- dispute resolution mechanisms
- financial self-sufficiency and cost-reduction measures.

The agency's final report, submitted to the Minister on September 1, 1999, contained 21 recommendations, with which Transport Canada concurs in principle.

The following recommendations apply to all pilotage authorities:
- identify, through consultation by each authority, any compulsory areas that justify a reexamination of the designation, based on a risk assessment and the conduct of a review every five years;
- maintain a case-by-case assessment of waivers' requests to compulsory pilotage and reasons for denial;
- maintain the current regional system for training and licensing pilots;
- report on the pool of qualified candidates in annual reports, including identifying any problems and corrective measures to address them;
- develop, through consultation, and implement a fair and reasonable system for assessing pilots' competence and quality of service;
- examine regularly all aspects of each authority's operations to improve efficiencies and further reduce costs;
- maintain the Act as it relates to the composition of boards of directors (i.e. no changes);
- plan regular consultations with interested parties on financial, operational and planning issues that affect such parties;
- establish a system for early release of practical information about minor incidents;
- establish a structured methodology for handling complaints, ensuring timely feedback about the outcome or the action taken to the complainant; and
- submit a plan to the Minister of Transport, within six months of tabling of the report, that sets out in order of priority the proposed implementation and anticipated completion date of all the Canadian Transportation Agency's recommendations.

The recommendations which apply to specific pilotage authorities have to do with a number of matters such as the development of material relevant for certification purposes and a description of certification exam expectations; a risk-based assessment to determine double pilotage requirements; a risk-based assessment of vessel-size limit and the types of vessels subject to compulsory pilotage; amendment of an authority's regulations for exempting vessels from compulsory pilotage; adding a provision allowing for the revocation of an exemption from compulsory pilotage.

FINANCIAL AND OPERATING PERFORMANCE

In 1999, pilotage revenues, on a nationwide basis, once again exceeded expenditures. As shown in Table 10-21, three of the four pilotage authorities managed to return modest surpluses, while the Great Lakes Authority's loss was covered by its retained earnings.

TABLE 10-21: PILOTAGE AUTHORITY FINANCIAL RESULTS, 1999

(Thousands of dollars)

	Revenues	*Expenditures*	*Net Income (Loss)*
Atlantic	10,777	9,985	792
Laurentian	41,689	41,213	476
Great Lakes	14,545	14,898	(353)
Pacific	39,106	38,781	325
Totals	**106,117**	**104,877**	**1,240**

Source: Pilotage authorities' annual reports (preliminary)

The results for 1999 represent a continuation of the trend toward positive net incomes over the last few years. Financial results for each authority from 1995 to 1999 are shown in Table 10-22.

TABLE 10-22: PILOTAGE AUTHORITY FINANCIAL RESULTS, 1995 – 1999

(Millions of dollars)

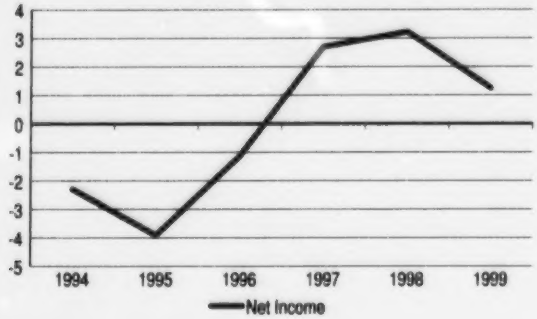
Region	*Year*	*Revenues*	*Expenditures*	*Net Income (Loss)*
Atlantic Pilotage Authority (APA)	1995	7,642	7,584	58
	1996	8,030	7,538	492
	1997	9,638	8,595	1,043
	1998	9,466	8,796	670
	1999	10,777	9,985	792
	Per cent change	**13.8**	**13.5**	**18.2**
Laurentian Pilotage Authority (LPA)	1995	34,367	38,544	(4,177)
	1996	36,019	38,847	(2,828)
	1997	38,185	39,019	(834)
	1998	41,311	40,847	464
	1999	41,689	41,213	476
	Per cent change	**0.9**	**0.9**	**2.6**
Great Lakes Pilotage Authority (GLPA)	1995	11,318	9,978	1,340
	1996	12,659	11,643	1,016
	1997	13,251	12,041	1,210
	1998	17,249	15,548	1,701
	1999	14,545	14,898	(353)
	Per cent change	**(15.7)**	**(4.2)**	**(120.8)**
Pacific Pilotage Authority (PPA)	1995	34,221	35,363	(1,142)
	1996	36,039	35,859	180
	1997	39,802	38,519	1,283
	1998	37,441	37,056	385
	1999	39,106	38,781	325
	Per cent change	**4.4**	**4.7**	**(15.6)**
Total Pilotage Authorities	1995	87,548	91,469	(3,921)
	1996	92,747	93,887	(1,140)
	1997	100,876	98,174	2,702
	1998	105,467	102,247	3,220
	1999	106,117	104,877	1,240
	Per cent change	**0.6**	**2.8**	**(61.5)**

Source: Pilotage authorities' annual reports (1999 preliminary)

Total revenues have risen only slightly, while expenses have generally kept pace with inflation over the five-year period. Nevertheless, Figure 10-9 shows clearly the trend toward improved bottom lines for pilotage authorities.

FIGURE 10-9: PILOTAGE AUTHORITY TOTAL NET INCOME, 1994 – 1999

(Millions of dollars)



Source: Pilotage authorities' annual reports (1999 preliminary)

To measure efficiency of pilotage services, the average number of assignments per pilot is commonly used. Based on this measure, efficiency has increased between 1995 and 1999 by 3.1 per cent.

Table 10-23 shows the number of assignments for each pilotage authority and the total for all authorities between 1995 and 1999. The variations among the authorities and the fluctuations over the period are in response to traffic levels. Overall, total assignments have grown by 9.4 per cent since 1995.

TABLE 10-23: TOTAL PILOTAGE ASSIGNMENTS AND ASSIGNMENTS PER PILOT, 1995 – 1999

Pilotage Authority	*Indicators*	*1995*	*1996*	*1997*	*1998*	*1999*
Atlantic (APA)	Total Assignments	8,668	8,576	9,760	9,726	11,090
	Assignments per Pilot	180	186	212	187	213
Laurentian (LPA)	Total Assignments	21,937	21,342	20,941	22,018	21,654
	Assignments per Pilot	127	123	120	121	120
Great Lakes (GLPA)	Total Assignments	6,091	6,901	7,192	9,085	8,108
	Assignments per Pilot	107	121	113	147	118
Pacific (PPA)	Total Assignments	13,199	13,403	14,212	13,267	13,776
	Assignments per Pilot	115	113	124	115	117
Total All Authorities	Total Assignments	49,895	50,224	52,105	54,096	54,628
	Assignments per Pilot	127	126	129	132	131

Source: Pilotage Authorities Annual Reports.

CANADIAN COAST GUARD

RESPONSIBILITIES

The Canadian Coast Guard's (CCG) mission is to ensure safe and environmentally responsible use of Canada's waters; support understanding and management of ocean resources; facilitate the use of Canada's waters for shipping, recreation and fishing; and provide marine expertise in support of Canada's domestic and international interests.

The Coast Guard has undergone major restructuring over the past several years as it merged with the Department of Fisheries and Oceans (DFO). In keeping with this new partnership and with its main role of ensuring safe and environmentally responsible use of Canada's waterways, the Coast Guard works with its counterparts in the DFO sector to advance the department's oceans mandate.

The Coast Guard is divided into five business lines that cover all five regions of DFO. These five lines include: marine navigation services; marine communications and traffic services; icebreaking operations; rescue, safety and environmental response activities; and fleet management.

Under these business lines, the Coast Guard delivers a wide range of marine programs, policies and services that encompass several sectors within the marine community: commercial shipping interests, recreational boaters, the fishing industry, ferry services, tug and barge re-supply operations in the North, cruise lines, private-sector shippers, and provincial, municipal and territorial governments, as well as federal government departments.

In addition, the Coast Guard serves the general public through its role in protecting their interest in preserving ecosystems, ensuring water supplies remain unpolluted by oil and chemical spills, and protecting recreational resources.

The Department of Fisheries and Oceans has two key result commitments: the conservation and biological sustainability of fisheries resources, marine and freshwater habitats and a protected environment; and the provision of safe, efficient and accessible waterways and harbours. The Coast Guard's contributions to these commitments are found in each of its business lines. These include such areas as response to marine oil emergencies, efficient and effective aids to navigation infrastructure, annual deliveries by ship to northern settlements and military sites, and client and public awareness of programs and policies.

Marine Navigation Services

The Coast Guard's Marine Navigation Services (MNS) group provides, operates and maintains a system of navigational aids that include 262 automated light stations, 52 of which are staffed; 5 LORAN C communication stations; 18 Differential Global Positioning System (DGPS) transmitter sites; more than 6,000 land-based fixed marine aids; and more than 13,000 floating aids. In addition, the group develops and maintains waterways, ensures the public's right to navigation is protected, and protects the environment. These responsibilities are in keeping with the Department of Fisheries and Oceans' commitment to safe, efficient and accessible waterways.

The Marine Navigation Services division will continue with and move forward on a number of activities in support of its mission, including continuing to modernize aids to navigation through several initiatives. One of these is the complete implementation of a full DGPS by the spring of 2000. In addition, the division will continue to modernize, maintain, implement and upgrade information systems such as national databases on the use of Canadian waterways, the Aids Program Information System (APIS), the Marine Aids Costing Model (SRAN) and the Navigable Waters Database System. Marine Navigation Services will also pursue amendments to the *Navigable Waters Protection Act.*

Marine Communication and Traffic Services

Marine Communication and Traffic Services provides distress and safety communications and co-ordination; vessel screening to prevent entry of unsafe vessels into Canadian waters; regulation of vessel traffic movements; and management of an integrated system of marine information and public correspondence services. In addition to ensuring safe marine navigation, Marine Communication and Traffic Services supports economic activities by optimizing traffic movements and port efficiency, and facilitating industry ship/shore communications. All of these functions are derived from a regulatory framework that is based primarily on the *Canada Shipping Act* and the Safety of Life at Sea Convention.

The group's supporting infrastructure includes staffed communications centres and remote transmitter and receiver sites.

By the nature of its operations, Marine Communication and Traffic Services is a key element of the national movement toward sustainable development for oceans and marine resources. It fully supports Oceans Strategy by exploring ways to improve the monitoring and management of protected marine areas.

The group is also improving its surveillance capability by developing implementation strategies for universal Automatic Identification Systems (AIS) technology, a leading-edge marine navigation technology that offers both mariners and competent authorities a more efficient and cost-effective means of service delivery. This group also improves communications capability by continuing the implementation of the Global Maritime Distress Safety System (GMDSS), as well as continually reviewing infrastructure to provide possibilities for further efficiencies through the application of technological changes.

Icebreaking Operations

Icebreaking operations include such activities as providing icebreaking escorts, channel maintenance, flood control, harbour breakouts, and ice-routing and information services for marine traffic navigating through or around ice-covered waters. This business line also co-ordinates the movement of cargo for the annual re-supply of northern settlements and military sites using contracted commercial carriers.

The Icebreaking Program has moved from its traditional role of providing a wide range of free services to a more client-focused, demand-driven service role that reflects recent downsizing activities. Commercial users now pay a percentage of the allocated costs in the form of an icebreaking service fee. The program's challenge in providing these services is to match the ice season and client requirements with service capacity on a year-to-year basis so that resources are used efficiently.

The program also maintains international expertise and recognition through its involvement with the US Coast Guard, North Atlantic Ice Patrol and other governments involved in icebreaking. It has also strengthened its alliance with Transport Canada's Marine Safety Branch for the Harmonization of Polar Ship Rules, to protect Canada's position and take a proactive role in forums dealing with ice operations or ships operating in ice-covered water. An economic study on the benefits of icebreaking services continues; preliminary results indicate that benefits far outweigh the costs of the service.

Rescue, Safety and Environmental Response

The objective of the Rescue, Safety and Environmental Response (RSER) group is to save lives and protect the marine environment. The group provides maritime search and rescue (SAR) services, and environmental response and departmental national emergency preparedness. It also promotes boating safety to the public through prevention and regulation. The group's supporting infrastructure includes search and rescue stations with in-shore rescue boats, as well as several spill-response equipment depots.

This group implemented a number of major new measures to improve boating safety in 1999. These include ensuring mandatory operator competency, age and horsepower restrictions, and modernizing small vessel regulations; and improving the effectiveness of oil spill preparedness and response regime through a review of the regime's regulations, standards and guidelines. In addition, the group continued to develop a hazardous and noxious substances response regime for Canada by maintaining consultations with major stakeholders and providing an effective maritime search and rescue service through quality initiatives and enhanced evaluations.

Fleet Management

The goal of the Fleet Management group is to provide a safe, efficient and cost-effective sea and air fleet and the related services necessary to support Department of Fisheries and Oceans program activities, as well as improve client satisfaction. In keeping with this goal, the Fleet Management group acquires, maintains and schedules the department's sea and air fleets in support of the following program areas: Marine Navigation Services; Marine Communications and Traffic Services; Icebreaking Operations; Rescue, Safety and Environmental Response; Fisheries Management; and Fisheries and Oceans Science and Hydrography. The funding to crew and operate the fleet is provided by the particular program areas. Fleet Management also arranges for any necessary increase in fleet capabilities by co-ordinating with other government departments and the private sector to provide additional sea and air support to the programs.

Fleet Management is in the process of moving toward a base-fleet concept in which an established minimum number of vessels would deliver the program requirements and provide a stable base for financial, operational and human resource planning. The group is also continuing to implement the fleet safety management system to meet the standards of the International Management (ISM) Code for the Safe Operation of Ships. Future plans for the group include implementing a costing model to give managers and clients a true understanding of the cost of fleet operations.

TABLE 10-24: CANADIAN COAST GUARD, VESSEL, AIRCRAFT AND FACILITY ASSETS, 1999

Vessels and Aircraft		*CCG Facilities*	
125	major ships	11	major bases
500+	Small craft[1]	8	sub-bases
23	inshore rescue boats	22	MCTS centres
4	air cushion vehicles	48	SAR bases
28	rotary-wing aircraft		
3	fixed-wing aircraft[2]		

1 Includes lifeboats, surf boats, self-propelled barges, small craft carried on larger ships, shore-based work boats, floating spill boats, oil slick-lickers, and other small craft at CCG bases and light stations.
2 Two owned by Transport Canada and one chartered.

Source: Department of Fisheries and Oceans

FINANCIAL PERFORMANCE

Through a combination of efficiency measures and reduced operations, resulting in lower expenses, the Coast Guard has permanently reduced its net expenditures on the services described above by $140 million, or 30 per cent, over the four-year period ending 1998/99. Table 10-25 shows the Coast Guard's financial results for its five major business lines from 1995/96 to 1999/2000.

TABLE 10-25: CANADIAN COAST GUARD, REVENUES AND EXPENDITURES, 1995/96 – 1999/2000

(Millions of dollars)

	1995/96	*1996/97*	*1997/98*	*1998/99*	*1999/2000*[1]
Revenue (1)	11.5	27.3	37.3	39.9	48.5
Gross Expenditures (2)	533.4	540.2	522.8	471.0	514.1
Net Expenditures (1)-(2)	521.9	512.9	485.5	431.1	465.6

1 1999/2000 reflects forecasted expenditures to year-end and will not be finalized until the end of the fiscal year.

Source: Department of Fisheries and Oceans (Canadian Coast Guard). includes Marine Navigation Services (MNS), Marine Communication and Traffic Services (MCTS), Icebreaking Services, Rescue, Safety and Environmental Response (RSER), and Fleet Management.

The Coast Guard has implemented user fees for some programs to obtain a fair contribution from users for programs from which they directly benefit. The Marine Navigation Services Fee was first introduced in June 1996. It offsets, on average, 27 per cent of the full costs of providing marine navigational services to the commercial shipping industry.

In September 1997, a Maintenance Dredging Services Tonnage Fee for the St. Lawrence Ship Channel was introduced. This fee is only an interim measure to cover the total costs incurred by the Coast Guard to provide these dredging services. The Coast Guard is currently working with representatives of the marine transportation industry to arrive at a long-term arrangement, including the possibility of transferring responsibility for these dredging services to industry.

On December 4, 1998, the Minister of Fisheries and Oceans outlined elements for a revised Icebreaking Services Fee (ISF) proposal that would generate $6.65 million annually plus administrative costs. The proposal is built around a transit-based icebreaking fee that will be uniformly applied to each transit to, from or within the ice zone during the ice season. Table 10-26 shows the breakdown of the Coast Guard's revenues and expenditures by its five main business lines for the fiscal year 1999/2000.

TABLE 10-26: REVENUES AND BUDGETED EXPENDITURES OF THE CANADIAN COAST GUARD, 1999/2000

(Millions of dollars)

	Business Line					
	MNS	*MCTS*	*ICE*	*RSER*	*Fleet Mgmt.*	*CCG Total*
Revenues (1)	28.3	0.3	14.8	0.1	0.0	48.5
Gross Expenditures (2)	131.6	75.3	61.2	104.1	141.9	514.1
Net Expenditures [(1)-(2)]	103.3	75.0	41.4	104.0	141.9	465.6

Notes: MNS = Marine Navigation Services; MCTS = Marine Communication and Traffic Services; ICE = Ice Breaking Services; RSER = Rescue, Safety and Environmental Response; CCG = Canadian Coast Guard.

Source: Department of Fisheries and Oceans (Canadian Coast Guard), including Marine Navigation Services (MNS), Marine Communication and Traffic Services (MCTS)

AIR TRANSPORTATION INFRASTRUCTURE

AIR NAVIGATION SYSTEM

Since November 1, 1996, Canada's Air Navigation System (ANS) has been managed by NAV Canada, a private, non-share capital corporation. The Air Navigation System is made up of seven area control centres (ACC), one stand-alone terminal control unit, 43 control towers, 78 flight service stations and 67 maintenance centres, plus more than 1,400 ground-based navigational aids. The system provides services that include air traffic control, flight information, weather briefings, airport advisories and electronic aids to navigation.

During 1999, NAV Canada used a due diligence approach to risk-manage the Y2K issue from a safety perspective. It completed the identification, assessment and upgrade of systems that were identified as potential Y2K problems, and jointly tested systems with the Department of National Defence, various airport authorities, the US Federal Aviation Authority and the UK Aviation Authority. The corporation also put contingency plans in place and ensured that all changes to its information technology environment were monitored and Y2K-assessed. As a result of these efforts, all NAV Canada operational systems successfully made the transition to the Year 2000.

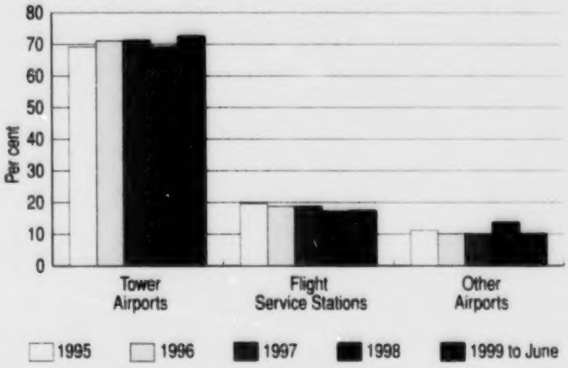
AIR NAVIGATION OPERATIONS

In the fiscal year ending August 31, 1999, NAV Canada centralized it operations by merging its Pacific, Western and Central offices into one regional office in Edmonton, saving $12 million. As part of the next stage in the consolidation of administrative functions, the company has initiated plans to create an Eastern Regional Office that will consolidate the Ontario, Quebec and Atlantic regional offices.

The air navigation system supported some 3.6 million aircraft arrivals and departures at Canadian airports in the first six months of 1999. This was 0.3 per cent more than in the same period of 1998.

The distribution of aircraft arrivals and departures by type of airport category is shown in Figure 10-10. The partial year figures for 1999 reflect the slightly higher proportion of traffic at towered airports during the winter months.

FIGURE 10-10: AIRCRAFT MOVEMENTS BY AIRPORT CATEGORY, 1995 – 1999



Source: Transport Canada, Aircraft Movement Statistics TP-577

At the end of December 1999, the company had 156 air traffic controller trainees not yet licensed. The complement of air traffic controllers, control towers and area control centres for 1995 to 1999 are listed in Table 10-27.

TABLE 10-27: SUMMARY OF CANADA'S AIR TRAFFIC CONTROLLERS, TOWERS, AREA CONTROL CENTRES, AND TERMINAL CONTROL UNITS, 1995 – 1999

Year	*Air Traffic Controllers*[1]	*Towers*	*Area Control Centres*	*Terminal Control Units*
1995	1,959	45	7	2
1996	1,927	44	7	2
1997	1,956	44	7	1
1998	1,952	44	7	1
1999	1,912	43	7	1

[1] Licensed operational controllers.

Source: NAV Canada

The total number of towers dropped by one in 1999 with the closure of North Bay's tower in March. The number of area control centres has remained constant since 1995. A NAV Canada study on airspace sectorization was based on the clear statement that no centres were to close.

SYSTEM IMPROVEMENTS

Estimates for 1999/2000 show investment by NAV Canada in technology to be about $100 million to $125 million. Along with Y2K projects, the corporation's other major project in 1999 was the installation of back-up power systems in all area control centres.

NAV Canada began hubbing its maintenance operations in 1999, allowing a reduction in the number of maintenance centres while continuing to meet its published maintenance response time policy. Such a change was made possible by the increased reliability of technology and the redundancies built into the system. Completion of the implementation is targetted for August 2000, by which time there will be a total of 46 centres.

In October 1999, NAV Canada announced $40 million in new capital projects designed to enhance the safety of the ANS and improve customer service. As some of these projects are multi-year, only a portion of this investment is included in the 1999/2000 fiscal-year total. These projects include:

- new radar systems in Yellowknife and Kuujjuaq
- a new digital voice communications system for towers and flight service stations across the country
- new and updated radar processing hardware and software
- a new control tower for Kelowna.

FINANCIAL PERFORMANCE

NAV Canada fully implemented user fees on November 1, 1998, when the Air Transportation Tax was abolished completely, along with transition-period payments. Increases to user fees scheduled for that time were deferred to March 1, 1999, saving commercial airlines around $72 million according to NAV Canada estimates.

With the abolition of transition payments by the government to NAV Canada, the corporation became totally dependent financially on its customers to generate sufficient revenues to cover all its costs. The corporation's user-fee structure is in accordance with the *Civil Air Navigation Services Commercialization Act*, which restricts the corporation's revenues to an amount that includes "reasonable prudent reserves" above the costs of operation.

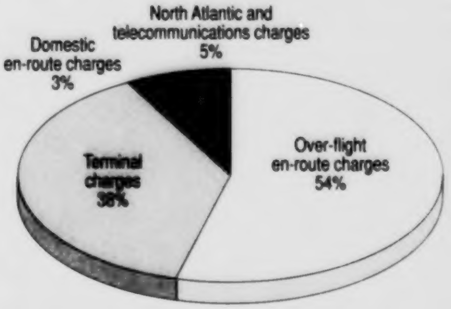
NAV Canada collects its revenues in the form of charges levied on aircraft operators for the provision or availability of air navigation services. The charging system consists of terminal and enroute charges, overflight charges and oceanic charges. Aircraft weighing three metric tonnes or less pay a flat annual fee, while aircraft weighing greater than three metric tonnes are charged on a per movement or daily basis.

On September 1, 1999, NAV Canada introduced service charge reductions that are expected to save users $100 million in the ensuing 12 months. These changes resulted in a reduction of fees for major services that vary from 7.5 per cent to 13.7 per cent, depending on the service.

At applicable airports north of 60° N, Terminal Service Charges are being introduced in two phases, the first of which began November 1, 1999.

Figure 10-11 shows the fee sources for NAV Canada in percentage terms for 1999.

FIGURE 10-11: NAV CANADA FEE SHARES, 1999



Source: NAV Canada

For the fiscal year ending August 31, 1999, NAV Canada reported $933 million in revenues, $711 million in operating expenses, and $215 million in interest, depreciation and restructuring expenses. This resulted in an excess of revenues over expenses of $7 million. This compares with 1998 fiscal results of $892 million in total revenues, $715 million in operating expenses, and $172 million in interest, depreciation and restructuring expenses for a $6 million excess of revenues over expenses. Table 10-28 compares NAV Canada financial results for 1998 and 1999.

TABLE 10-28: FINANCIAL SUMMARY FOR NAV CANADA, 1998 – 1999

(Thousands of dollars)

Item	*1999*	*1998*
Total Revenue	933,120	892,490
Operating Expenses	710,640	714,682
Other Expenses	215,537	171,827
Excess of Revenue over Expenses	6,943	5,981
Capital Expenditures	**122,555**	**126,488**

Source: NAV Canada Annual Report, 1999

AIRPORTS

Canada has approximately 1,800 aerodromes, the generic name for facilities registered with Transport Canada as aircraft landing and take-off sites. They are divided into three categories: water bases for float and ski planes, heliports for helicopters, and land airports for fixed-wing aircraft.

The more developed and active of these sites must meet Transport Canada airport certification standards. By the end of 1999, there were approximately 750 certified sites in all three categories, representing a 19 per cent increase over the 631 reported in 1998. This increase is due to clarifications in the requirements for certification "within a built-up area," which resulted in the addition of several helicopter landing sites (at hospitals, for example) that had not previously been certified.

The number of certified land airports — at which the majority of commercial aviation activity takes place — has remained relatively stable since 1998. Of the total certified sites, 354 were certified as land airports for fixed-wing aircraft in 1999.

Table 10-29 shows that of the total of 1,110 sites in the land airport category, 238 offered scheduled passenger services in 1999, while the remaining 872 were available for other public and private uses.

TABLE 10-29: CANADIAN LAND AIRPORTS FOR FIXED-WING AIRCRAFT, 1999

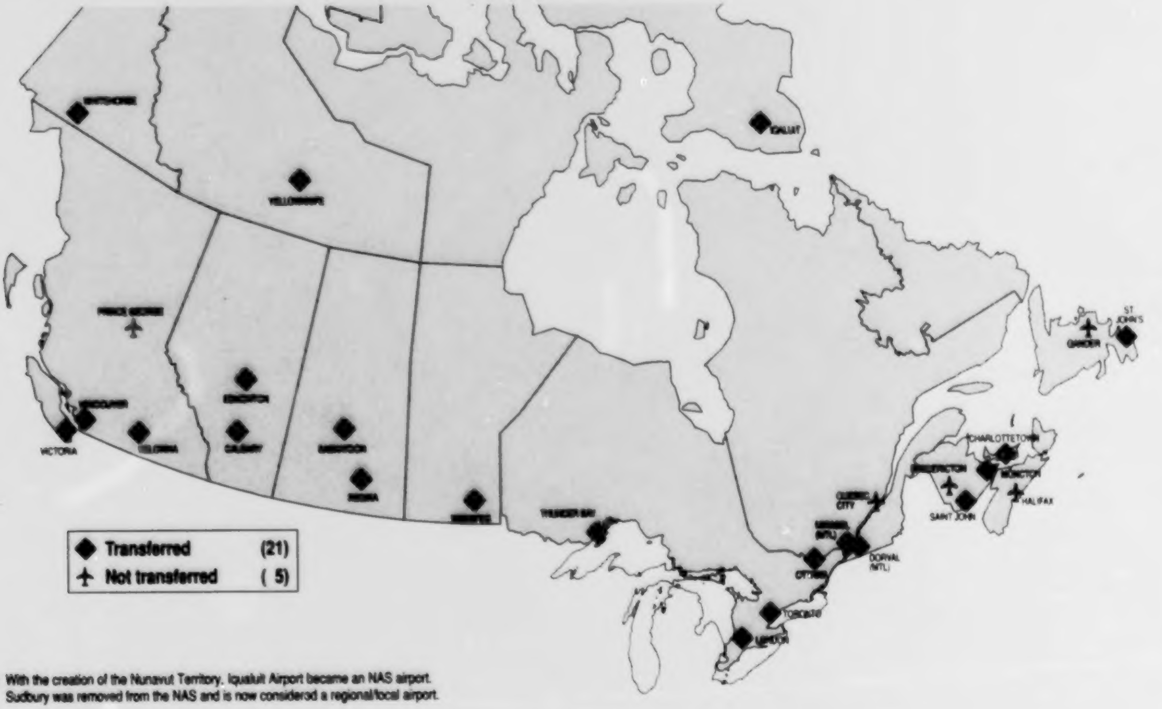
Airport type	*Number*	*Airport service*	*Number*
Certified Land Airports	354[1]	Airports with Scheduled Passenger Service	238[2]
Registered Land Aerodromes	742		
Military (land) Aerodromes	14	Airports/Aerodromes without Scheduled Passenger Service	872
Total	**1,110**	**Total**	**1,110**

1 Canada Flight Supplement, December 1999
2 Official Airline Guide

Source: Transport Canada

Over 94 per cent of all commercial passenger air traffic in Canada is handled by 30 airports.[8]

FIGURE 10-12: MAP OF AIRPORTS DIVESTITURE, 1999 – NATIONAL AIRPORT SYSTEM AIRPORTS



WHITEHORSE
YELLOWKNIFE
IQALUIT
PRINCE GEORGE
EDMONTON
VANCOUVER
VICTORIA
KELOWNA
CALGARY
SASKATOON
REGINA
WINNIPEG
THUNDER BAY
QUEBEC CITY
MIRABEL (MTL)
DORVAL (MTL)
OTTAWA
TORONTO
LONDON
FREDERICTON
CHARLOTTETOWN
MONCTON
SAINT JOHN
HALIFAX
GANDER
ST JOHN'S
◆ Transferred (21)
✈ Not transferred (5)

Note: With the creation of the Nunavut Territory, Iqaluit Airport became an NAS airport.
Sudbury was removed from the NAS and is now considered a regional/local airport.

Source: Transport Canada

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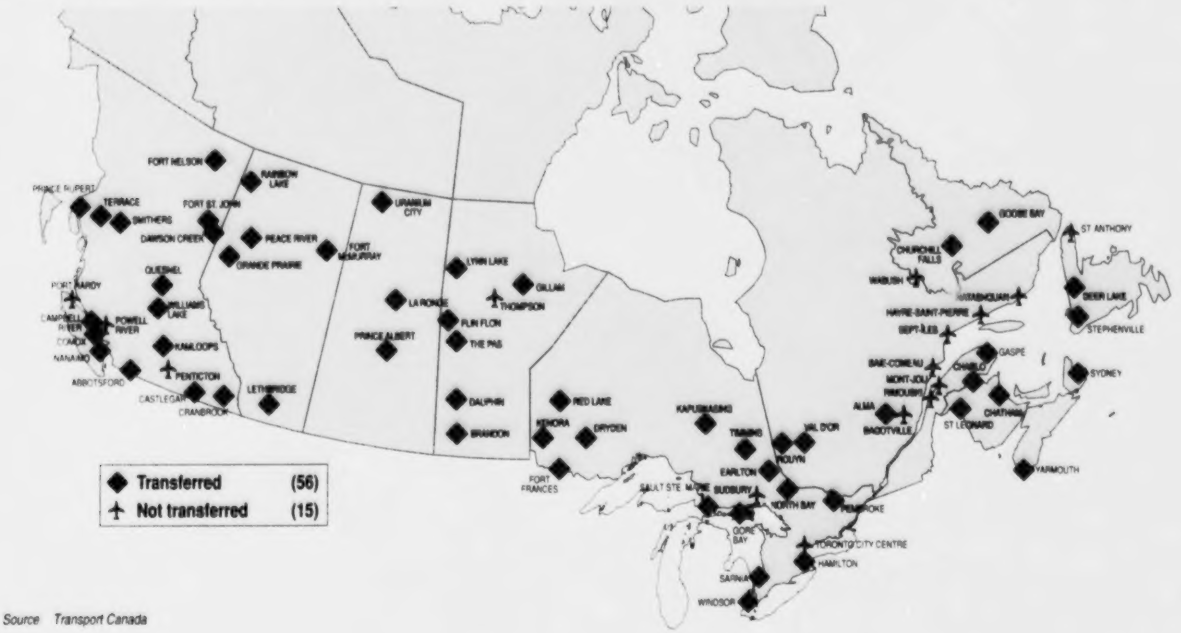
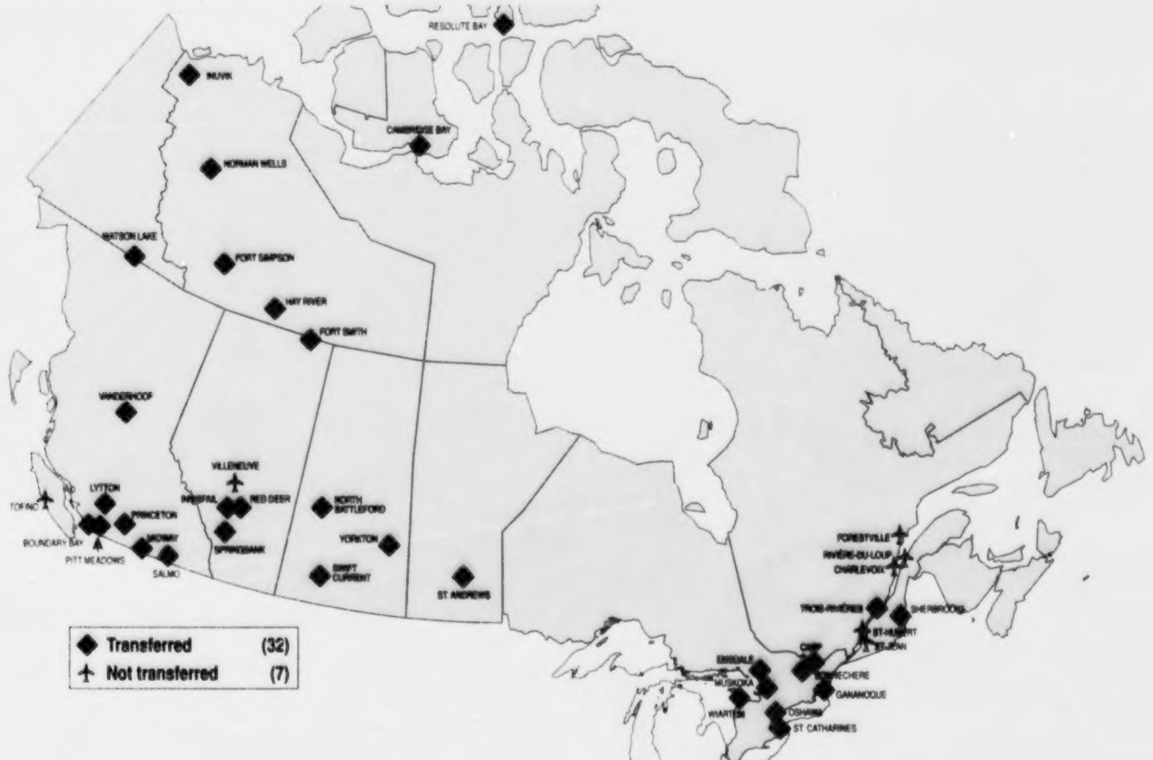
[8] Top 30 airports in terms of enplaned plus deplaned passengers.

FIGURE 10-13: MAP OF AIRPORTS DIVESTITURE, 1999 – REGIONAL / LOCAL AIRPORTS


FORT NELSON
RAINBOW LAKE
PRINCE RUPERT
TERRACE
SMITHERS
FORT ST. JOHN
DAWSON CREEK
PEACE RIVER
GRANDE PRAIRIE
FORT McMURRAY
URANIUM CITY
QUESNEL
PORT HARDY
WILLIAMS LAKE
CAMPBELL RIVER
POWELL RIVER
COMOX
NANAIMO
KAMLOOPS
PENTICTON
ABBOTSFORD
CASTLEGAR
CRANBROOK
LETHBRIDGE
LYNN LAKE
GILLAM
LA RONGE
THOMPSON
FLIN FLON
PRINCE ALBERT
THE PAS
DAUPHIN
BRANDON
RED LAKE
KENORA
DRYDEN
FORT FRANCES
KAPUSKASING
TIMMINS
VAL D'OR
ROUYN
EARLTON
SAULT STE MARIE
SUDBURY
NORTH BAY
GORE BAY
PEMBROKE
TORONTO CITY CENTRE
HAMILTON
SARNIA
WINDSOR
GOOSE BAY
ST ANTHONY
CHURCHILL FALLS
WABUSH
NATASHQUAN
DEER LAKE
HAVRE-SAINT-PIERRE
SEPT-ÎLES
STEPHENVILLE
GASPE
BAIE-COMEAU
CHARLO
MONT-JOLI
RIMOUSKI
SYDNEY
ALMA
BAGOTVILLE
CHATHAM
ST LEONARD
YARMOUTH
◆ Transferred (56)
✈ Not transferred (15)

Source *Transport Canada*

FIGURE 10-14: MAP OF AIRPORTS DIVESTITURE, 1999 – SMALL AND ARCTIC AIRPORTS


RESOLUTE BAY
INUVIK
CAMBRIDGE BAY
NORMAN WELLS
WATSON LAKE
FORT SIMPSON
HAY RIVER
FORT SMITH
VANDERHOOF
VILLENEUVE
LYTTON
TOFINO
PRINCETON
BOUNDARY BAY
PITT MEADOWS
MIDWAY
SALMO
INNISFAIL
RED DEER
SPRINGBANK
NORTH BATTLEFORD
YORKTON
SWIFT CURRENT
ST. ANDREWS
FORESTVILLE
RIVIÈRE-DU-LOUP
CHARLEVOIX
TROIS-RIVIÈRES
SHERBROOKE
ST-HUBERT
ST-JEAN
CARP
EDENVALE
MUSKOKA
ECHERE
GANANOQUE
WIARTON
OSHAWA
ST CATHARINES
◆ Transferred (32)
✈ Not transferred (7)

Source *Transport Canada*

Prior to 1994, Transport Canada owned, operated or subsidized 149 airports. Since the introduction of the 1994 National Airports Policy (NAP), however, most of these have been transferred to locally based operators, either by way of lease — as is the case with the major airports within the National Airports System (NAS) — or sale.[9]

In 1999, airports in Saskatoon, Regina, Charlottetown and Saint John were transferred to not-for-profit airport authorities. Halifax was transferred at the beginning of the year 2000, leaving only four NAS airports under Transport Canada management. Figures 10-12, 10-13 and 10-14 show the location of each airport and its divestiture status as of December 31, 1999.

Over the past year, airport authorities continued to pursue improvements to airport infrastructure, operations and customer service. Victoria, Saskatoon, Ottawa and St. John's announced expansion and renovation plans, while Vancouver, Calgary, Edmonton, Montreal, Toronto and Moncton continued to implement capital improvement programs they had started in previous years. Airline restructuring initiatives introduced toward the end of 1999 may affect the timing of expansion at some airports. All airports are examining the potential impact to their particular environments.

By the end of 1999, most airport authorities had introduced airport improvement fees (AIFs) as a means of funding capital projects. In addition, most had entered into agreements whereby the airlines collect airport improvement fees from passengers at the time of ticket purchase. The amount of the airport improvement fee is shown separately on the ticket.

Table 10-30 lists the airports that charge airport improvement fees, as well as when they started and the amount collected in 1998.

REVIEW OF AIRPORT AUTHORITY LEASES

Between 1997 and 1999, Transport Canada conducted a review of the Vancouver, Calgary, Edmonton and Montreal airport authorities. Established in 1992, they were the first four locally based airport authorities to operate airports. The *LAA Lease Review Consultation Report*, which was made available to stakeholders in April 1999, found the airport transfer policy to be a success. Canada has seen a rapid expansion at several National Airport System airports, at no cost to the taxpayer, and the provision of better service to the travelling public. The review confirmed that the government's decision to commercialize its key airports was a sound one, and that the 1994 National Airports Policy was a positive step.

TABLE 10-30: AIRPORT IMPROVEMENT FEES AT CANADIAN AIRPORTS, DECEMBER 31, 1999

	Airport Improvement Fee				
Airport	*Charge per Passenger*	*Date*	*Amount Collected ($000) 1998*	*Collected directly*[1]	*Collected through tickets*[2]
Vancouver	$5-$15[3]	May 1993	53,834	X	
Calgary	$10[4]	Jan. 1999	14,736		X
Edmonton	$5-$10[5]	April 1997	14,310		X
Montreal	$10	Nov. 1997	30,275	X	
Kelowna	$5	Feb.1998	-		X
Winnipeg	$5	July 1998	2,196		X
Thunder Bay	$10	Mar. 1998	1,369	X	
Moncton	$10	Oct. 1998	307	X	
Ottawa	$10	Sept. 1999	-		X
Regina	$10	Sept. 1999	-		X
St. John's	$10	Sept. 1999	-		X
Saint John	$9	Sept. 1999	-	X	
Saskatoon	$5	Sept. 1999	-		X
Victoria	$10	Oct. 1999	-		X
London	$3	April 1999	-		X

1 Fees collected directly from passengers before embarking.

2 Collected through tickets: fees included automatically in the price of each departing ticket through an AIF agreement.

3 Vancouver: for destinations within British Columbia and Yukon, $5; other North America, Mexico and Hawaii, $10; other international, $15.

4 Calgary: the AIF from October 1997 to December 1998 was $5 per passenger and changed to $10 beginning January 1999.

5 Edmonton: the AIF was $5 for destinations within Alberta and $10 outside Alberta. As of January 1, 2000, it is $10 for all destinations.

Source: Data from 1998 airport authority annual reports and Web sites

The report also concluded that notwithstanding the many successes, some refinements should be considered to ensure the continued effectiveness of the policy. In particular, the review noted deficiencies in transparency relating to pricing practices and financial reporting by some local airport authorities. In keeping with these conclusions, it is expected that several "best practices" in place at some of the airports will be made standard across the National Airport System when the review is completed.

FINANCIAL PERFORMANCE

Airport Authorities' Revenues and Expenses

National Airports System airports are expected to eventually reach financial self-sufficiency. Airport authorities, incorporated as not-for-profit organizations with no equity shareholders, fund their operations and improvements with revenues derived from airport users. Under leases, the federal government (the owner of the airports) collects rent from the airport authorities.

In 1999, ten airport authorities issued annual reports for the full calendar year 1998. These financial results are summarized in Table 10-31. With 67.2 million enplaned/deplaned passengers, these airport authorities generated on

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[9] More detailed information on the National Airports Policy and the status of airport divestitures is available on Transport Canada's Web site at www.tc.gc.ca/en/airports.htm.

TABLE 10-31: AIRPORT AUTHORITIES FINANCIAL PERFORMANCE, 1998

(Thousands of dollars)

Financial Information	*Calgary*	*Vancouver*	*Edmonton*	*Montreal*	*Toronto*	*Ottawa*	*Winnipeg*	*Victoria*	*Moncton*	*Thunder Bay*	*TOTAL*
Aeronautical Revenues	29,746	72,509	14,940	47,809	222,543	17,106	10,992	3,457	1,823	3,034	423,959
Non-Aeronautical Revenues	34,356	110,370	22,400	76,496	149,688	16,441	12,585	4,187	1,481	2,208	430,211
Airport Improvement Fee	14,736	53,834	14,310	30,275	0	0	2,196	0	307	1,369	117,027
Sub-Total Revenues	**78,838**	**236,713**	**51,650**	**154,580**	**372,231**	**33,547**	**25,773**	**7,644**	**3,611**	**6,610**	**971,197**
Expenses (less Interest Charges)	53,225	150,168	36,888	137,650	285,671	29,019	21,928	6,109	4,320	3,655	728,632
Income	**25,613**	**86,545**	**14,762**	**16,930**	**86,560**	**4,528**	**3,845**	**1,535**	**(709)**	**2,955**	**242,565**
Interest Charges	0	21,928	(27)	151	56,019	175	0	0	9	18	78,273
Net Income	**25,613**	**64,617**	**14,789**	**16,779**	**30,541**	**4,353**	**3,845**	**1,535**	**(718)**	**2,937**	**164,292**
Acquisition of capital assets	63,645	73,421	37,199	56,452	193,749	3,643	5,107	2,032	875	127	436,250
Enplaned / Deplaned Passengers	7,659	14,473	3,792	8,647	25,000	2,750	2,883	1,214	280	504	67,203
Ratios											
% of Operating	67.51	63.44	71.42	89.05	76.75	86.50	85.08	79.92	119.62	55.29	75.02
% of Aeronautical Revenues Vs Total	37.73	30.63	28.93	30.93	59.79	50.99	42.65	45.23	50.49	45.90	43.65
% of Non-Aeronautical Revenues Vs Total	43.58	46.63	43.37	49.49	40.21	49.01	48.83	54.77	41.00	33.40	44.30
% of AIF Vs Total Revenues	18.69	22.74	27.71	19.59	0.00	0.00	8.52	0.00	8.51	20.71	12.05
Total Revenues per passenger	**10.29**	**16.36**	**13.62**	**17.88**	**14.89**	**12.20**	**8.94**	**6.30**	**12.90**	**13.10**	**14.45**
Total Expenses per passenger	**6.95**	**10.38**	**9.73**	**15.92**	**11.43**	**10.55**	**7.61**	**5.03**	**15.43**	**7.24**	**10.84**

Note: **Aeronautical and Non-aeronautical Revenues:** Aeronautical revenues are generated principally from airlines and other commercial aviation sources, and consist mainly of landing fees and terminal fees. Revenues from concessionaire sales (stores, restaurants, etc.), car parking, and space rental are considered non-aeronautical.

Source: *Airport Authority 1998 annual reports*

average $14.45 per passenger in revenues and incurred expenses of $10.84 per passenger in 1998. In addition, the airports combined spent a total of $436.3 million on the acquisition of capital assets. All ten airport authorities, with the exception of Moncton, showed a net profit in 1998. Moncton generated revenues from airport improvement fees for only a portion of the year.

In 1998, the ten airport authorities generated total revenues of $971.2 million, with total expenses (before interest) of $728.6 million. Revenues of $424.0 million from aeronautical sources represented 43.7 per cent of their total revenues as a group. Individually, the percentage of total revenues generated from aeronautical sources ranged from 28.9 to 59.8 per cent.

In 1998, non-aeronautical revenues (excluding airport improvement fees) totalled $430.2 million, or 44.3 per cent of all revenues generated by these ten airport authorities. On a site-by-site basis, the percentages ranged from 33.4 per cent at Thunder Bay, to 54.5 per cent at Victoria. Airport improvement fees generated $117.0 million, or 12.1 per cent of total revenues.

Transport Canada's Revenues and Expenses

With the transfer of airports to locally based airport authorities, Transport Canada's expenditures and revenues from the operation of airports are declining, while lease revenues are increasing. In 1998/99, Transport Canada spent $179.8 million on the operation of airports and took in revenues of $78.2 million. It received an additional $190.2 million in rent from the airport authorities. For fiscal year 1999/2000, Transport Canada forecasts $165.6 million in spending, $53.8 million in revenues and $211.2 million in rent.

AIRPORT CAPITAL ASSISTANCE PROGRAM

The Airport Capital Assistance Program (ACAP) was established in April 1995 to help eligible non-National Airport System airports finance capital projects related to safety, asset protection and operating-cost reduction. To be eligible for this funding, the airports must receive a minimum of 1,000 regularly scheduled passengers annually, meet airport certification requirements and not be owned by the federal government.

In 1999, 47 projects at 56 airports were approved for funding, at a total estimated cost of $30.4 million. Approved projects included the rehabilitation of runway, taxiway and apron pavements; the purchase of mobile equipment, such as runway sweepers, snow blowers and sander trucks; the refurbishment of air terminal buildings; the purchase and installation of visual aids; and the installation of security fencing.

After an evaluation of the Airport Capital Assistance Program, Transport Canada concluded in 1999 that the rationale behind, and the delivery of, the program is consistent with the department's top priority — safety — and should therefore continue.

Table 10-32 summarizes Airport Capital Assistance Program expenditures by province from 1995/96 to 1998/99.

TABLE 10-32: AIRPORT CAPITAL ASSISTANCE PROGRAM EXPENDITURES BY PROVINCE, 1995/96 – 1998/99

(Thousands of dollars)

Province	*1995/96*	*1996/97*	*1997/98*	*1998/99*	*Total*
Newfoundland	-	-	-	-	-
Prince Edward Island	-	-	-	-	-
Nova Scotia	-	-	-	402	402
New Brunswick	509	885	1,087	4,553	7,034
Quebec	-	-	3,203	5,911	9,114
Ontario	909	3,233	13,465	7,617	25,224
Manitoba	151	172	970	2,187	3,480
Saskatchewan	-	2,877	452	1,575	4,904
Alberta	90	815	1,129	3,017	5,051
British Columbia	33	1,417	880	3,307	5,637
Northwest Territories	-	-	-	-	-
Yukon	-	-	-	-	-
Nunavut	-	-	-	-	-
Total	**1,692**	**9,399**	**21,186**	**28,569**	**60,846**

Source: Transport Canada

Appendix 10-1 lists the projects receiving funding approval under the program, by site and province in 1999.

APPENDIX 10-1

AIRPORTS CAPITAL ASSISTANCE PROGRAM – PROJECTS APPROVED IN 1999

				Project funding in thousands of dollars	
Province	*Site*	*Description*	*Funded*	*Site Total*	*Province Total*
Newfoundland	Churchill Falls	Rehabilitate Runway 13-31, Taxi "A" & Apron	13.07.99	3,153.5	
	Deer Lake	Various Airport Improvements / Mobile equipment	21.12.99	1,412.2	4,565.7
Prince Edward Island					0.0
Nova Scotia					0.0
New Brunswick	Bathurst	Heavy Mobile Equipment – Front-End Loader	10.05.99	192.0	
	St. Leonard	Various Airport Improvements	14.06.99	1014.2	1,206.2
Quebec	Gaspé	Rehabilitate Runway	08.03.99	4,529.8	
	Val d'Or	Rehabilitate airport installations	08.07.99	696.0	
	La Grande Rivière	Purchase of Heavy Equipment	14.10.99	305.5	5,531.3
Ontario	Nakina	Heavy Airside Mobile Equipment	16.02.99	27.5	
	Dryden	Fire Pump System	05.03.99	63.5	
	Earlton	Front End loader & Runway Sweeper	05.03.99	325.7	
	Fort Frances	Construction of an ATB	26.04.99	332.5	
	Dryden	Upgrade Airfield Lighting	07.06.99	606.0	
	Fort Frances	Purchase Loader Mounted Sweeper	02.07.99	177.5	
	Geraldton	Rotating Beacon	22.12.99	5.5	
	North Bay	Replace Front End Loader & Runway Sweeper	02.07.99	265.0	
	Sault Ste. Marie	Ramp Plow	16.07.99	10.0	
	Sault Ste. Marie	Runway Friction Testing Equipment	18.10.99	4.3	
	Hamilton	Snowplow Truck & Front End Loader	20.10.99	289.7	
	Windsor	Heavy Mobile Equipment – Runway Sweeper	22.10.99	148.4	
	Hamilton	Crash/Fire Rescue Vehicle Replacement	09.11.99	312.6	
	Red Lake	Side Tilt Sander Box	02.12.99	47.0	
	Sault Ste. Marie	Heavy Mobile Equipment – Plow Truck	09.12.99	113.9	2,729.1
Manitoba	Various Airports	Install Lighted Beacons at 19 Airports	21.01.99	313.5	
	Dauphin	Rehab. Runway 08-26 and ATB Groundside Access	08.03.99	1,146.1	
	Lynn Lake	Rehabilitate Runway 17-35, Taxi "A" & Apron	11.05.99	2,352.7	
	St. Andrews	Replacement of Runway Sweeper	12.11.99	162.4	
	Flin Flon	Replacement of Sand Spreader Truck	16.11.99	156.0	4,130.7
Saskatchewan	Fond-du-Lac	Rehabilitate Runway, Taxiway & Apron	01.03.99	2,096.3	
	Uranium City	Heavy Mobile Equipment – Grader	08.03.99	274.5	
	Fond-du-Lac	Installation/Restoration Safety Fencing	11.03.99	428.5	
	Points North Landing	Rehabilitation of Movement Surfaces	06.04.99	1,700.3	
	La Ronge	ATB/FSS Operating Cost Reduction	08.04.99	70.0	
	Wollaston Lake	Rehabilitate Airside Surfaces	12.04.99	1,698.6	
	La Ronge	Heavy Airside Mobile Equipment	05.10.99	497.9	6,766.1
Alberta	Grande Prairie	Replace Runway Sweeper	18.05.99	176.0	
	Edmonton City Centre	Rehabilitate Runway 12-30	13.07.99	718.4	
	High Level	Refurbish Visual Aids	23.07.99	312.8	
	Medicine Hat	Groundside Access, ATB Roof & Beacon	26.08.99	88.3	
	High Level	Heavy Airside Mobile Equipment	05.10.99	305.9	
	Fort Chipewyan	Rehab. Airfield Pavements & Drainage	12.11.99	2,172.3	
	Lloydminster	Snow Plow Truck Replacement	23.11.99	143.0	3,916.7
British Columbia	Cranbrook	PAPI Installation	02.07.99	91.6	
	Nanaimo	Taxiway Signage Replacement	02.07.99	14.4	
	Salmon Arm	PAPI Installation	02.07.99	95.0	
	Anahim Lake	Pavement Rehabilitation	02.07.99	941.6	
	Salmon Arm	Heavy Mobile Equipment – Replace Sweeper	29.11.99	156.5	1,299.1
Northwest Territories	Yellowknife	Emergency Response Vehicle	19.08.99	230.4	230.4
				Total	**30,375.3**

Source: Transport Canada

STRUCTURE OF THE TRANSPORTATION INDUSTRY 11

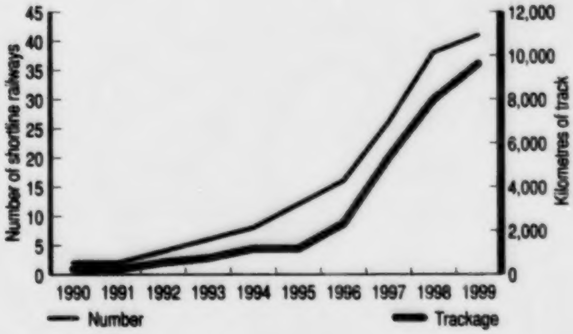
While airline restructuring attracted a lot of attention in 1999, changes also took place in other modes.

RAIL INDUSTRY STRUCTURE

For many years, the rail freight industry consisted of two national railways, CN and CPR, plus five large regional rail carriers, a small number of US railway subsidiaries (operating only a short distance into Canada), and about a dozen switching, terminal or bridge railway companies, or some 30 railways in total. In recent years, Canada's rail industry has undergone dramatic change.

In the late 1980s and early 1990s, a modest number of recent-era[1] shortline railways began to appear. After 1995, however, the number of shortlines began to increase significantly, as illustrated in Figure 11-1. Since the late 1980s, over 40 shortline carriers have formed, operating more than 9,600 kilometres of track and having aggregate annual revenues of almost $140 million. Over 75 per cent of these new carriers were formed after 1995.

FIGURE 11-1: SHORTLINE INDUSTRY GROWTH, 1990 – 1999



Source: Transport Canada

While the number of shortline carriers continues to grow, ownership has not. In 1998, six companies controlled the majority of shortlines formed since the late 1980s. In 1999, however, the makeup of the Canadian shortline industry changed. RailAmerica Inc.[2] purchased both RaiLink (the largest Canadian shortline company) and RailTex, increasing the concentration of ownership within the industry. RailAmerica currently owns nine operations in Canada (both coasts and numerous others in the Canadian interior), dominating the Canadian shortline scene in the number of rail operations, length of track and geographic distribution.

Table 11-1 shows the nature of ownership concentration within the Canadian shortline industry.

TABLE 11-1: MAJOR SHORTLINE OPERATIONS IN CANADA, 1999

Corporation		*Owned/Leased Trackage (kilometres)*	*Number of Canadian Railways Controlled*
RailAmerica		3,562	9
RaiLink Properties	2,569		
RailTex Properties	707		
E&N Properties	266		
OmniTRAX		1,830	3
SCFQ[1]		1,216	4
Genesee Rail-One		771	2
Iron Road[2]		393	3

1 Société des Chemins de fer du Québec.

2 Does not include Northern Vermont which does not own track in Canada or the Bangor and Aroostook, which only comes a short distance into Canada.

Source: Transport Canada

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[1] Shortline and regional railways existed prior to this time, but were not termed such. The term "shortline" gained widespread acceptance following the explosive growth of this sector in the US during the early 1980s. This followed the passage of the *Staggers Rail Act*, which allowed railways, particularly the Class I railways in the US, to embark on the rationalization of their systems on a significant scale.

[2] Previously, Rail America's only other Canadian property was the E&N Railway on Vancouver Island.

CANADIAN NATIONAL (CN) / BURLINGTON NORTHERN SANTA FE (BNSF) COMBINATION

On December 20, 1999, the Canadian National Railway Company (CN) and Burlington Northern Santa Fe Corporation (BNSF) announced that their boards of directors had approved an agreement to combine their businesses, subject to shareholder and government regulatory approvals. Under the agreement, both railways intend to maintain their current regional operating and marketing focus, but share information technology, purchasing and selected marketing functions.

To implement the transaction, North American Railways Inc. is to be created as the parent company for BNSF and as the companion company for CN. Each company is to have the same shareholder base and each shareholder, the same economic benefits and voting rights.

Overview of operations

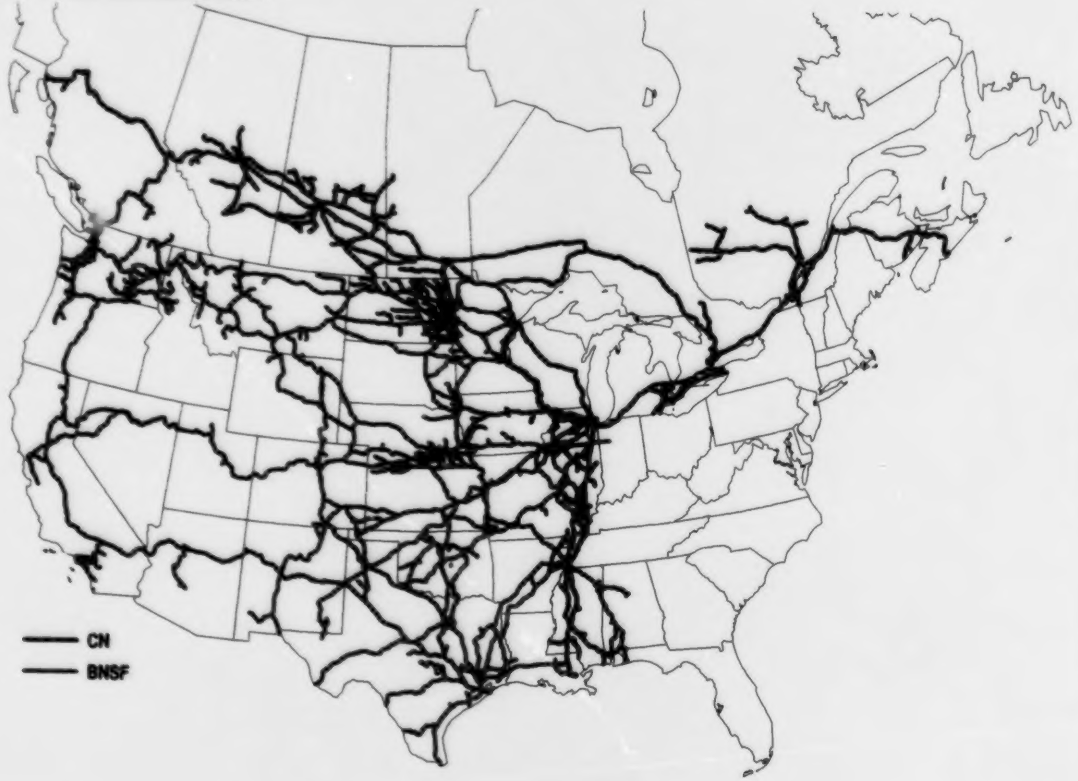
Canadian National Railway Company

- the largest rail network in Canada and the only transcontinental network in North America
- 26,000 kilometres of tracks
- serves 9 Canadian provinces and 15 US states
- serves the ports of Vancouver, Montreal, Halifax, New Orleans and Mobile (Alabama)
- has the shortest route from the Atlantic coast to the US Midwest
- employs roughly 23,500 employees in Canada and the US
- operates 1,650 locomotives and 66,000 freight cars
- operates an average of 265 scheduled freight trains per day.

Burlington Northern Santa Fe Corporation

- one of the largest rail systems in North America
- 54,000 kilometres of tracks
- serves 28 US states and 2 Canadian provinces
- serves all major West Coast ports and the Gulf of Mexico
- has the shortest route between the Pacific Northwest and Chicago and the only single-line service route between Southern California and the Southeast
- employs roughly 43,000 employees
- has about 5,000 locomotives (3,800 road units) and 98,000 rail cars
- operates an average of 1,300 freight trains per day.

FIGURE 11-2: CN AND BNSF RAIL NETWORK



Source: Transport Canada

Another recent change is the extent of US ownership. Of the five major corporations listed in Table 11-1, four are US-owned. While US companies have had a presence in Canada for some time, it was not until the recent Rail America acquisitions that US-based corporations assumed such a dominant role in the Canadian shortline industry.

These five corporations account for 63 per cent of the total number of shortline carriers formed since the passage of the *Canada Transportation Act* in July 1996, as well as over 83 per cent of the trackage transferred. In 1999, however, these corporations accounted for only about 35 per cent of the transfer activity. Most transfers during the past year were to smaller carriers or corporations with limited Canadian shortline holdings.

In contrast to the rail freight sector, the rail passenger sector has remained essentially unchanged for many years. VIA Rail continues to dominate the sector in both revenue and traffic, with about 95 per cent of passenger-related revenues (including subsidies) and about 95 per cent of total passenger-kilometres and passengers. Although it owns relatively little trackage, VIA Rail has extensive running rights, largely over CN trackage. Smaller rail passenger services are offered by BC Rail, the Algoma Central Railway, the Ontario Northland Railway and the Quebec North Shore & Labrador Railway. In addition to these services, Amtrak provides services into Montreal and Vancouver, as well as into Toronto, the latter in conjunction with VIA Rail. Great Canadian Railtour also operates a seasonal service between Vancouver, Calgary and Jasper.

TRUCKING INDUSTRY

Trucking is a vital component for many industries in the Canadian economy. For-hire trucking activities generate significant revenues and account for many jobs within Canada. Estimates indicate that more than 300,000 people worked in the for-hire trucking industry in 1998, generating revenues of approximately $39.2 billion.

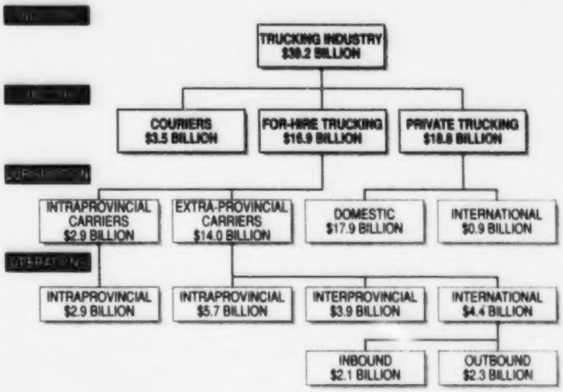
MAJOR EVENTS IN 1999

LEGISLATIVE AND REGULATORY

Proposed Amendments to the *Motor Vehicle Transport Act, 1987*

Following extensive consultations with provinces and stakeholders, the federal Minister of Transport introduced proposed amendments to the *Motor Vehicle Transport Act, 1987* (MVTA) in March 1999.

FIGURE 11-3: TRUCKING INDUSTRY STRUCTURE AND REVENUES, 1998


TRUCKING INDUSTRY $39.2 BILLION
COURIERS $3.5 BILLION
FOR-HIRE TRUCKING $16.9 BILLION
PRIVATE TRUCKING $18.8 BILLION
JURISDICTION
INTRAPROVINCIAL CARRIERS $2.9 BILLION
EXTRA-PROVINCIAL CARRIERS $14.0 BILLION
DOMESTIC $17.9 BILLION
INTERNATIONAL $0.9 BILLION
OPERATIONS
INTRAPROVINCIAL $2.9 BILLION
INTRAPROVINCIAL $5.7 BILLION
INTERPROVINCIAL $3.9 BILLION
INTERNATIONAL $4.4 BILLION
INBOUND $2.1 BILLION
OUTBOUND $2.3 BILLION

Source: Statistics Canada, Cat. 53-222-XPB; "Profile of Private Trucking in Canada", L.P. Tardiff Associates, Jan. 1998; "1998 Canadian Courier Market Sizing Study." Infobase Marketing Inc., Oct. 1998

Although interprovincial and international truck and bus (motor carrier) operations come under federal jurisdiction in Canada, the provinces have been primarily responsible for the regulation of these carriers under the authority of the MVTA. Amendments proposed for the Act were primarily designed to allow the provinces to implement the national carrier safety compliance standard that had been developed by the federal and provincial governments in consultation with industry. Provinces are also adopting this standard in their own legislation and regulations.

The proposed amendments had not gone through the complete legislative process when Parliament prorogued in September 1999.

Internal Trade and National Harmonization

The transportation chapter in the *Agreement on Internal Trade* calls for the complete elimination of economic regulation of trucking in Canada. At the national level, this means repealing Part III of the MVTA, which has permitted economic regulation of the intraprovincial component of extra-provincial trucking.

On August 26, 1999, the Governor General in Council approved an order establishing January 1, 2000, as the date for repeal of Part III of the MVTA.[3] As of this date, trucking is no longer subject to economic controls, such as economic entry controls and tariff regulations, in any part of Canada.

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[3] Order In Council Number P.C./C.P. 1999-1469.

Vehicle Weights and Dimensions

Vehicle weights and dimensions have a profound effect on trucking costs, productivity and competitiveness, and are a major factor in highway infrastructure costs. The interjurisdictional Task Force on Vehicle Weights and Dimensions Policy, reporting to the Council of Deputy Ministers Responsible for Transportation and Highway Safety, co-ordinates policy through collective action and acts as a forum for exchanging information on provincial initiatives.

In 1999, the Task Force developed and proposed national standards for warning signs and for marking and lighting over-dimensional vehicles and loads — that is, those that exceed normal standards and operate under special permits.

New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador, in consultation with Quebec, are developing a proposal for uniform vehicle weight and dimension regulations within Atlantic Canada, initially for use as a basis for consultation with stakeholders.

Meanwhile, Manitoba, Saskatchewan, Alberta and British Columbia have been working closely with stakeholder groups to develop a proposal to harmonize special permit requirements within western Canada for heavy haul and overweight loads and to develop common requirements for the movement of specialized equipment under permit.

North American Free Trade Agreement (NAFTA)

NAFTA's Land Transportation Standards Subcommittee (LTSS) was formed to develop compatible technical standards for improving the safety and efficiency of bus, truck and rail operations, and governing the transportation of dangerous goods. The three NAFTA countries also established a Transportation Consultative Group (TCG) to address issues not related to standards, such as cross-border operations and research and development. In 1999, the group completed work on several driver standards issues for truck operations through a series of agreements on operating and medical requirements. It also continued to work toward the compatibility of vehicle, driver and operator standards, with discussions focusing on such issues as vehicle dimension safety performance criteria, log books to record driver hours of service, and motor carrier supervision.

INDUSTRY EVENTS

As in previous years, 1999 had its share of mergers and acquisitions of motor carriers. Examples involving some of the larger Canadian carriers include:

- **Mullen Transportation** of Alberta purchased the remaining 60 per cent interest in Ontario-based Mill Creek, which specialized in general freight to major centres in Canada, the US and Mexico. (January)
- **Contrans Corporation**, through its subsidiary Laidlaw Carriers, purchased Steel City Carriers, the trucking business of RailAmerica Inc., based in Florida. Both parties agreed to pursue rail-truck intermodal opportunities throughout North America. (January)
- **H&R Transport Limited**, a Canadian carrier in the refrigerated freight business, acquired C.H. Dredge & Co. of Salt Lake City. The combined business will operate approximately 530 tractors and 700 trailers throughout the Canada and the US. With a larger fleet, the company expects to lower the cost of equipment and fuel, and operate more efficiently by reducing the number of empty backhauls. (March)
- **Trimac Transportation** of Calgary acquired an 80 per cent interest in Amer-Liquid Transport of Brownsville, Texas, expanding its operations between the US and Mexico. Trimac has engaged in crossborder operations since 1993 under an interline arrangement with Intermex, a Mexican tank-truck carrier. (July)
- **Trimac Transportation** acquired three Nova Scotia-based operations and one Newfoundland-based operation to further expand its business in Atlantic Canada. These include Sullivan Fuels Bulk Hauling Division of Sydney, Nova Scotia; Gateway Fuels Bulk Hauling Division of Yarmouth, Nova Scotia; Roadmaster Transport's Container Transport Division of Dartmouth, Nova Scotia; and J&L Trucking of Botwood, Newfoundland. (September)
- **Trimac Transportation** agreed to buy Initial DSI Transports of Houston for $68.3 million, further consolidating the tank-truck segment of the industry. DSI bulk products, had revenues of $156.2 million in 1998. The company has 34 terminals, mostly in the Gulf Coast, Southeast and mid-Atlantic regions, and operates a fleet of more than 900 tractors and 1,350 trailers. (December)

In transborder operations, besides mergers and acquisitions of US-based carriers, Canadian carriers use partnerships with US-based carriers to penetrate the US market. These alliances not only expand the carriers' market, they redesign the way carriers do business by allowing them to offer such services as overnight, next-day and second-day delivery over a much broader territory. In addition, such alliances can lead to the integration of the carriers' information systems and the sharing of invoicing and inventory control systems. There were numerous mergers, acquisitions and alliances of carriers on both sides of the Canada–US border in 1999. Some examples include:

- **Trimac Transportation** and four other bulk trucking companies — Groendyke Transport Inc., Manfredi Motor Transit Co., Superior Carriers Inc. and Miller Transporters — entered into a pooling arrangement of load matching and capacity sharing. Member companies have combined annual revenues of approximately $1.1 billion. (February)
- **North American Van Lines** and **Allied Van Lines** completed a $450 million merger. A new holding company known as Allied Worldwide, operating in 36 countries with more than 1,100 agents, expects to have annual revenues of more than $2 billion. The company will operate North American Van Lines and Allied Van Lines in the United States and Canada; Pickfords in the United Kingdom; and Allied Pickfords in Europe, Australia, New Zealand and Asia. (November)

CHARACTERISTICS OF THE TRUCKING INDUSTRY

More than 13,200 freight carriers comprise the highly diversified trucking industry. This number does not include small for-hire carriers earning less than $25,000 in revenues, small private carriers incurring less than $1 million in expenses, or owner-operators.

These 13,200 carriers include approximately 10,300 for-hire carriers with annual revenues exceeding $25,000, 450 private carriers with annual operating expenses exceeding $1 million, and 2,400 courier companies. Another 40,000 owner-operators with annual revenues exceeding $25,000 contract services to either private or for-hire carriers or operate independently. These figures do not include small for-hire and small private carriers, or organizations such as farms, utility companies and municipalities that own and operate trucks.

Trucking firms differ from each other in a number of ways:

- **Size** — Companies range from single-unit owner-operators to large firms operating thousands of power units.
- **Equipment** — Some carriers use specialized equipment, such as logging trucks, hopper-bottom grain trailers or cement mixers; others use general-purpose vans or flatdeck trailers.
- **Geographic coverage** — Intraprovincial carriers operate locally within a province; interprovincial carriers operate across provincial boundaries; international carriers move shipments into the US.
- **Type of services** — Some carriers provide truckload service (full load/single shipper); others provide less-than-truckload service (multiple shipments from multiple shippers); others haul containers as part of intermodal operations.
- **Alliances** — Some carriers handle general freight in one region, while others interline with carriers in other regions, even other countries.

The trucking industry comprises two major components: for-hire trucking and private trucking. For-hire trucking companies offer transportation services for compensation, providing either truckload (TL) or less-than-truckload (LTL) services (or a mix of the two) in domestic or international markets. For-hire trucking firms can be further categorized into market segments according to the types of freight carried, notably the following:

- *General Freight carriers* handle many different types of freight in vans and general-freight trailers.
- *Household Goods carriers* use specialized trailers to transport furniture and other personal household possessions.
- *Liquid Bulk carriers* use tanker trucks to transport liquids such as petroleum, milk and chemicals.
- *Dry Bulk carriers* use dump or hopper-bottom trailers to haul goods such as grain, fertilizer and gravel.
- *Forest Products carriers* use special logging trucks to transport logs from the forest to the mill.
- Other *Specialized Freight carriers* include auto haulers using special trailers to transport cars and trucks from production plants to dealerships, and couriers that use a variety of types of trucks to transport small parcels and mail.

General freight carriers dominate the for-hire sector, accounting for almost 60 per cent of for-hire revenues in 1998. Table 11-2 compares the revenues of for-hire trucking firms according to the types of freight carried for 1998.

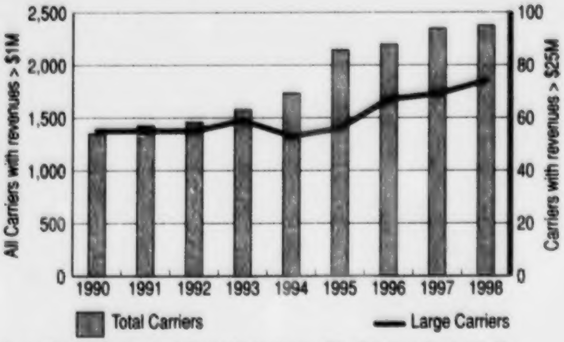
TABLE 11-2: FOR-HIRE CARRIER REVENUES BY MARKET SEGMENT, 1998

	Revenue (Millions of dollars)	*Per cent of total*
General Freight	8,902.0	59.8
Household Goods	454.8	3.1
Liquid Bulk	1,069.6	7.2
Dry Bulk	1,091.8	7.3
Forest Products	721.4	4.8
Other Specialty Freight	2,648.8	17.8
Total	14,888.4	100.0

Source: Statistics Canada, Annual Supplement (Q5) to the Quarterly Motor Carrier Freight Survey

Figure 11-4 presents the number of for-hire carriers earning annual revenues of $1 million or more between 1990 and 1998. The total number of for-hire carriers has

FIGURE 11-4: NUMBER OF FOR-HIRE TRUCKING CARRIERS EARNING ANNUAL REVENUES OF $1 MILLION OR MORE, 1990 – 1998



Source: Statistics Canada, Annual For-Hire Carriers Survey, 1990–1993; Annual Supplement (Q5) and the Quarterly Motor Carrier Freight Survey, 1994–1998

increased steadily since 1990, with a major increase in 1995. Overall, the number of carriers increased over the 1990 to 1998 period. However, this increase partly reflects a new survey frame used by Statistics Canada in its trucking survey.

The number of very large carriers (carriers earning more than $25 million in revenues annually) has fluctuated between 55 and 75 firms over this period.

Table 11-3 shows the percentage share of total for-hire revenues for each size of carrier from 1991 to 1998.

Revenues generated by carriers earning more than $25 million steadily decreased as a percentage of total industry revenues between 1991 and 1995, while the actual number of carriers in this category remained relatively stable. This suggests an increased level of concentration faced by this segment of the industry. The proportion of their revenues to total industry revenues declined from 33 per cent in 1991 to 25.7 per cent in 1997. Over the same period, there was an increase of ten per cent in the share of revenues generated by carriers earning between $12 million and $25 million.

However, in 1998, the number of carriers earning more than $25 million increased by almost 20 per cent over 1997. This may be the result of increased merger and acquisition action by the large carriers in 1998. In turn, this could explain the decline in the number of carriers in the group earning between $12 million and $25 million.

The share of total industry revenues earned by carriers earning between $1 million and $12 million fluctuated around 40 per cent between 1991 and 1998. The small carriers earning less than $1 million saw their share of industry revenues drop to 12.4 per cent in 1998.

Table 11-4 ranks the key Canadian-based for-hire trucking firms by the size of their fleets. It also indicates the types of services they offer.

Interprovincial and international activities, both of which are under federal jurisdiction, are often referred to as extra-provincial trucking. These activities accounted for over $14 billion in 1998, 83 per cent of total for-hire trucking revenues. A significant part of these revenues, 40 per cent, however, were derived from intraprovincial operations.

COURIERS

The courier industry, which transports small packages, is another important segment of the trucking industry. This type of service may provide door-to-door service or combine different transportation services, such as intercity bus, air cargo and LTL truck services.

Based on a daily average delivery of 1.5 million packages of Canadian origin weighing less than 150 pounds, a recent study[4] estimated that total 1998 revenues for the courier industry were $3.5 billion.

TABLE 11-3: DISTRIBUTION OF TOTAL FOR-HIRE TRUCKING REVENUES BY SIZE OF CARRIER, 1991 – 1998

	Medium Carriers ($1 – 12 million)		*Large Carriers ($12 – 25 million)*		*Top Carriers (Over $25 million)*		*Small Carriers (Less than $1 million)*		*Grand Total*
Year	*Revenue ($ millions)*	*Share (% of Total)*	*Revenue ($ millions)*	*Share (% of Total)*	*Revenue ($ millions)*	*Share (% of Total)*	*Revenue ($ millions)*	*Share (% of Total)*	*Revenue ($ millions)*
1991	4,028.8	40.3	1,107.6	11.1	3,298.2	33.0	1,562.4	15.6	9,997.0
1992	4,217.4	41.8	1,072.2	10.6	3,256.1	32.3	1,537.3	15.2	10,082.9
1993	4,542.9	41.0	1,268.0	11.4	3,411.1	30.8	1,868.2	16.8	11,090.2
1994	5,212.8	40.4	2,208.5	17.1	3,541.4	27.5	1,929.9	15.0	12,892.6
1995	5,460.6	38.3	3,090.0	21.7	3,576.9	25.1	2,113.4	14.8	14,240.9
1996	5,731.8	37.6	3,453.2	22.7	3,917.7	25.7	2,127.1	14.0	15,229.8
1997	6,530.4	40.1	3,553.1	21.8	4,187.7	25.7	2,019.0	12.4	16,290.2
1998	6,591.6	38.8	3,280.5	19.3	5,015.9	29.5	2,100.0	12.4	16,988.0

Sources: Transport Canada based on Statistics Canada, Annual Motor Carriers of Freight Survey (AMCF) 1990-93; Annual Supplement (Q5) to the Quarterly Motor Carriers of Freight Survey (QMCF) 1994-98; 1998 small carriers' revenues estimated by Transport Canada

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[4] 1998 Canadian Courier Market Sizing Study, Infobase Marketing Inc., October 1998.

TABLE 11-4: MAJOR FOR-HIRE CARRIERS BY SECTOR - 1999

Total Vehicles	*Name of Carrier*	*Province*	*Sector*
4,359	Trimac Transportation Services	AB	TL,B,R,O
3,530	Mullen Transportation	AB	LTL, TL,B,O
3,307	Clarke Inc.	ON	LTL,TL,C,H,R
3,071	J.D. Irving Ltd.	NB	LTL, TL,B,C,R,O
3,058	Transx	MN	TL,R
3,040	Schneider National Carriers Canada	ON	TL,B,O
2,950	Robert Transportation	PQ	LTL,TL,B,C,
2,879	Contrans	ON	LTL,TL,B,C,R,O
2,727	SLH	ON	TL,LTL
2,677	Westminster Holdings	ON	LTL,TL,C,O
2,462	Paul's Hauling	AB	TL,LTL,B,R,O
2,416	Day & Ross Transportation Group	NB	TL,LTL,R,O
2,400	Reimer Express Lines (Roadway)	MN	LTL,TL,C,R,O
2,338	Cabano Kingsway	PQ	LTL,TL,B,C
2,302	Highland Transport (Westminster)	ON	TL,C
2,194	Kindersley Transport	SK	LTL,TL,R,O
2,172	Armour Transportation System	NB	LTL,TL,B,C,R,O
2,137	Tri-Line Freight Systems	AB	LTL,TL,R,O
2,128	Auto Haulaway	ON	O
2,108	Allied Systems Canada	ON	O
2,075	TST Solutions	ON	LTL,TL,O
2,035	Tri-Line Freight Systems	AB	LTL,TL,R,O
2,030	TNT Logistics	ON	LTL,TL,H,O
1,900	Canadian Freightways Group	AB	LTL,TL
1,802	Laidlaw Carriers (Contrans)	ON	TL,B,O
1,821	Challenger Motor Freight	ON	LTL,TL,C,O
1,731	Arnold Bros. Transport	MN	TL,C,R
1,710	Challenger Motor Freight	ON	LTL,TL,C,O
1,705	FTI Inc. Canada	ON	TL
1,664	TCT Logistics	AB	LTL,TL,C,R
1,604	Vitran Corp.	ON	LTL,TL,C
1,570	Midland Transport (Irving)	NB	LTL,TL,C,R,O
1,556	Wilson's Truck Lines	ON	TL
1,518	Groupe Papineau (Cabano)	PQ	LTL,TL,C,R
1,461	BLM Group Inc.	ON	LTL,TL,H,O
1,412	SGT 2000	PQ	TL,C,O
1,400	XTL Transport	ON	TL
1,374	Landtran Systems	AB	LTL,TL,R
1,368	Bruce R. Smith Ltd.	ON	TL,R
1,360	Gerth Transport	ON	LTL,TL
1,331	Canada Cartage System	ON	LTL,TL,B,O
1,322	Yankee Group	SK	TL,C,H,O
1,313	Cooney Group	ON	TL,B,O
1,300	Kleysen Transport	MN	TL,B,C,R,O
1,255	Bison Transport	MN	TL,H,R
1,227	Manitoulin Transport Group	ON	LTL,TL,B,C,H,R
1,219	Erb Group of Companies	ON	LTL,TL,R
1,173	Verspeeten Cartage	ON	TL
1,160	Canadian American Transportation	PQ	TL,B,C,O
1,160	Guilbault Transport Group	PQ	LTL,TL
1,130	Mackie Moving Systems	ON	TL,C,H,O
1,129	Thibodeau Transport Group	PQ	LTL,TL,C
1,110	Quik X Transportation	ON	LTL,TL,R
1,105	Purolator Courier	ON	LTL,O
1,077	Brookville Transport (Contrans)	NB	TL,R,O
1,066	Hunterline Group	BC	TL
1,049	Mullen Trucking (Mullen Transportation)	AB	LTL,B,C,R,O
1,031	Sundbury Transport (J.D. Irving)	NB	TL,B,C,R,O
1,022	Penner International	MN	LTL,TL

Sector Legend:
LTL = Less than Truckload; TL = Truckload; B = Dry or Liquid Bulk; C = Container;
H = Household Goods; R = Agricultural or Refrigerated; O = Other
Total Vehicles = include trucks, tractors and trailers, including owner-operator equipment, domiciled in Canada.

Source: Today's Trucking, March 1999, "The 1999 Top 100 for-Hire Fleets"

The industry carries letters, envelopes, pouches, boxes and cartons from Canada to destinations anywhere in the world. The domestic lane, shipments that originate and are delivered to locations in Canada, accounts for the majority of courier business in Canada — 95 per cent of total volume and 81 per cent of total revenue in 1998.

Nine carriers account for approximately 80 per cent of all courier traffic and revenues: Canada Post, Canpar, Federal Express, Loomis, Purolator, RPS, TNT Express Worldwide and United Parcel Service.

PRIVATE TRUCKING

Private trucking activities are conducted by companies, such as retailers or manufacturers, who haul their own goods. Typically, companies are involved in private trucking as they have a need to control service. Their fleet costs are comparable with or lower than those of for-hire carriers, and the visibility they receive from using their own trucks is considered to be a positive factor. In dollar terms, the for-hire sector and the private trucking sector are approximately of the same size.

According to one recent study,[5] private trucking services were valued at almost $19 billion annually. Private trucking dominates the movement of freight within Canada's urban areas, accounting for approximately 85 per cent of truck movements. For the most part, private trucking fleets comprise straight trucks and cube vans used for pick-up and delivery services to local businesses. While little information exists on the urban segment of private trucking, it is estimated to be valued in the order of a $12 billion a year.

When they run long hauls with tractor-trailers, private carriers may also obtain authority to haul goods for others. Under these circumstances, they in effect compete with for-hire trucking firms.

Private fleets, an integral part of a company's distribution network, provide a logistical support service to the companies that own them. These companies tend to be retail distributors for consumer goods, chemical products producers, pulp and paper companies, beverage distributors, and wholesale distributors of agricultural products.

Among the companies that operate substantial intercity fleets are Canadian Tire, Labatts, Molson, Home Hardware, Liquid Air, Kraft General Foods, Loblaws, 3M, Ault, Brewers Retail, Consumers Distributing, DuPont, Dominion Textiles, General Electric, K-Mart and Tim Horton Donuts.

The international, interprovincial and intraprovincial value of private trucking is calculated by means of the market share percentages established by the 1991 and 1995 CCMTA Roadside Surveys. However, the methodology focuses on longer distance trips; as a result, shorter distance trips, where private trucking is more dominant, may be under-represented.

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[5] L.P. Tardif Associates, "Profile of Private Trucking in Canada," January 1998.

Private trucking accounted for 41 per cent of intraprovincial trips, for an estimated value of almost $5 billion. Straight trucks were used for 44 per cent of these longer trips and tractor-trailers for 48 per cent. Shipments between Ontario and Quebec accounted for 76 per cent of intraprovincial private trucking in Canada.

Overall, private trucking accounted for 22 per cent of interprovincial trips and 28 per cent of international trips. The value of private trucking is estimated at approximately $1 million for each of these sectors. Private truckers are far more likely than for-hire truckers to use straight trucks for these movements.

In 1998, Statistics Canada surveyed 396 private trucking companies each with at least $1 million in operating expenses. Almost three quarters of these carriers were from Ontario and Quebec. Total operating expenses of these carriers, which were at $1.7 billion in 1997, reached $1.5 billion in 1998, the lowest level since 1990.

OWNER-OPERATORS

Owner-operators work under contract for either for-hire or private carriers, typically using their own tractors. Of the more than 40,000 owner-operators in Canada in 1997, almost half were under contract to carriers based in Ontario and Quebec and a further one third were concentrated in Alberta and British Columbia. More than 70 per cent of the owner-operators are under contract to for-hire carriers.

Table 11-5 presents the number of owner-operators under contract by carrier type, as well as revenues by province for 1997.

TABLE 11-5: NUMBER OF OWNER-OPERATORS BY TYPE OF CARRIER, 1997

	For-hire Carriers	*Private Carriers*	*Both*	*Total*	*Revenues ($millions)*
Newfoundland	238	90	46	374	64.6
Prince Edward Island	104	27	20	151	25.9
Nova Scotia	713	200	126	1,039	160.5
New Brunswick	1,216	299	187	1,702	265.1
Quebec	5,719	1,138	302	7,159	1,095.7
Ontario	9,700	2,985	768	13,453	1,658.9
Manitoba	1,352	420	229	2,001	291.5
Saskatchewan	1,287	443	173	1,903	286.9
Alberta	4,154	1,402	808	6,364	1,074.4
British Columbia	4,060	1,238	683	5,981	882.5
Yukon	39	14	6	59	10.3
Northwest Territories	24	12	0	36	6.2
Canada	28,606	8,268	3,348	40,222	5,822.4

Source: Statistics Canada, Annual Motor Carrier Freight Survey, Surface and Marine, Bulletin, Vol. 15 No. 1, Cat. 50-002

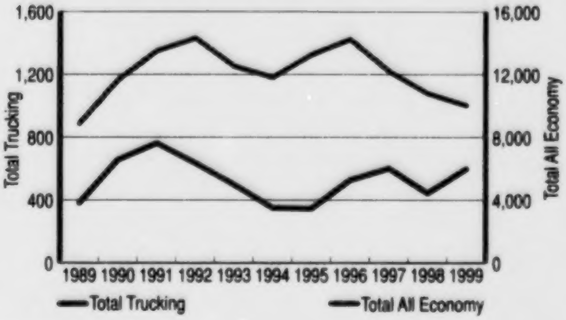
BANKRUPTCIES

Bankruptcies are about as common in the trucking industry as in the general economy, though there are some lags in the data. Trucking bankruptcies dropped rapidly between 1991 and 1994, stabilized in 1995, then increased in 1996 and 1997. Following a decline in 1998, they increased again in 1999. Preliminary estimates for 1999 are based on the number of bankruptcies between January and September.

Bankruptcies and other departures from the trucking industry do not have a significant effect on the provision of freight services. The majority of truck bankruptcies involve small operators, with one or two trucks, or companies that provide services ancillary to trucking.

Figure 11-5 compares the number of bankruptcies in the trucking industry with those in the Canadian economy from 1989 to 1999.

FIGURE 11-5: NUMBER OF BANKRUPTCIES, TRUCKING vs TOTAL ECONOMY, 1989 – 1999[1]



Source: Industry Canada, Office of the Superintendent of Bankruptcy

Table 11-6 shows the number of trucking bankruptcies by region between 1987 and 1999.

TABLE 11-6: ANNUAL TRUCKING BANKRUPTCIES BY REGION, 1987 – 1999[1]

Year	*Atlantic Provinces*	*Quebec*	*Ontario*	*Prairie Provinces*	*British Columbia and Territories*	*Total Trucking*	*Total Economy*
1989	27	65	58	143	88	381	8,864
1990	57	142	147	213	97	656	11,642
1991	98	107	191	223	143	762	13,496
1992	70	119	188	171	88	636	14,317
1993	70	91	152	130	56	499	12,527
1994	37	67	88	125	33	350	11,810
1995	31	81	58	141	34	345	13,258
1996	74	90	107	197	59	527	14,229
1997	82	119	164	178	58	601	12,200
1998	39	71	121	158	54	443	10,791
1999	46	104	143	249	56	598	10,026

Note: "Truck Transport Industries" include general freight, used goods moving and storage, bulk liquids, dry bulk materials, forest products and other truck transport industries.

Source: Industry Canada, Office of the Superintendent of Bankruptcy

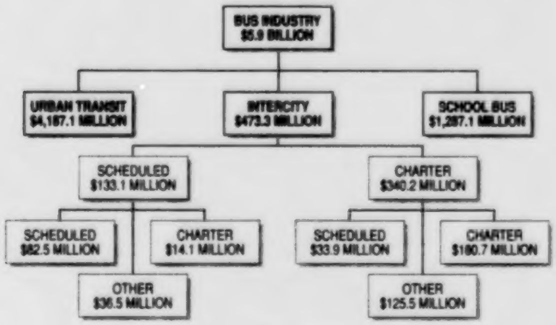
BUS TRANSPORTATION INDUSTRY

The Canadian bus industry includes three main business lines: intercity bus services, urban transit services and school bus services. Intercity bus services can be further broken down into scheduled and charter services. Charter services include airport shuttle services, services offered under contract, sightseeing services (urban or interurban), and convention services. Canadian bus transportation companies very seldom offer only one type of bus service. More often than not, they offer more services in an attempt to maximize the revenue-generating activities of their bus fleet.

For the purposes of classification, each firm has been listed under the line of business that generates more than half of its revenues.

Figure 11-6 shows the industry structure and revenues of the bus industry in Canada in 1998. This data includes almost $2.4 billion in operating and capital subsidies to urban transit operators. Table 11-7 summarizes revenues by sources of revenue for the same year.

FIGURE 11-6: BUS INDUSTRY STRUCTURE AND REVENUES, 1998



Source: Statistics Canada, Cat. 53-215-XIB

The Canadian bus industry experienced an overall 10.1 per cent increase in revenues (excluding urban transit subsidies) between 1995 and 1998. Within the different sectors, reported revenues were subject to variations during that period. They were caused, in part, by consolidated financial reporting resulting from mergers and acquisitions, as well as by a new industrial classification system implemented by Statistics Canada — North American Industry Classification System (NAICS).[6]

TABLE 11-7: SUMMARY OF REVENUES BY SOURCES OF REVENUE, 1998

	Intercity bus operators	*Charter[1] bus operators*	*School bus operators*	*Urban transit operators*	*Total*
Number of establishments	31	160	819	100	1,110
Sources of revenues	(Millions of dollars)				
Scheduled intercity services	82.5	33.9	123.7		240.1
Charters, sightseeing and shuttle services	14.6	222.8	126.0		363.4
School bus transportation	4.0	16.4	871.3		891.6
Urban transit services	2.5	7.9	35.3	1,671.2	1,716.9
Other passenger/ operating revenue	14.6	54.9	58.4	134.8	262.6
Parcels express	10.8	3.9	71.9		86.6
Subsidies[2]	4.2	0.3	0.5	2,381.1	2,386.2
Total	133.1	340.2	1,287.1	4,187.1	5,947.5

1 Consists of charter, shuttle and sightseeing services.
2 Includes operating and capital subsidies for urban transit operators.

Source: Statistics Canada, Cat. 53-215-XPB, Passenger Bus and Urban Transit Statistics - 1998

Table 11-8 shows the total revenues of the bus industry, by sector, for the 1995 – 1998 period. It also shows the percentage change in revenues from 1995 to 1998.

TABLE 11-8: TOTAL REVENUES BY INDUSTRY SECTOR, 1995 – 1998

Year	*1995*	*1996*	*1997*	*1998*	*Per cent change 1995 – 1998*
Scheduled Intercity	331.9	315.0	303.7	133.1	(59.9)
Charter	275.8	284.3	289.9	340.2	23.4
School	1,055.2	1,032.6	1,023.6	1,287.1	22.0
Urban (less subsidies)	1,576.2	1,651.9	1,759.1	1,806.0	14.6
Sub-total	**3,239.1**	**3,283.8**	**3,376.3**	**3,566.4**	**10.1**
Urban Transit Subsidies	2,034.5	2,054.8	2,133.8	2,381.1	
Total	**5,273.6**	**5,338.6**	**5,510.1**	**5,947.5**	**12.8**

Source: Statistics Canada, Cat. 53-215-XIB

MAJOR BUS EVENTS IN 1999

LEGISLATIVE AND REGULATORY CHANGES

Review of the *Motor Vehicle Transport Act, 1987*

In March 1999, the Minister proposed amendments to the federal *Motor Vehicle Transport Act 1987*, including deregulation of the extra-provincial bus industry through a two-stage process. In the first stage, the proposed amendments would deregulate interprovincial and international bus services; in the second stage, all bus services would be deregulated.

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[6] This uniform standardized classification system for industries in North America was developed by Canada, the US and Mexico as part of the 1995 North American Free Trade Agreement. NAICS has replaced the Standard Industrial Classification system used previously by Statistics Canada. The bus transportation industries covered under NAICS include urban transit systems, inter-urban and rural bus transportation, school bus transportation, the charter bus industry, shuttle services, and scenic and sightseeing transportation by bus.

This proposal followed several years of discussions with the provinces and industry stakeholders on the future of bus regulation in Canada. The MVTA allows each province and territory to decide whether to apply economic controls to extra-provincial bus carriers operating to and from its jurisdiction even though these carriers fall under federal jurisdiction. The federal government's position has always been to seek a consensus of government and industry in making changes to the MVTA.

In September 1999, the Minister announced that, in the absense of consensus on the future of extra-provincial bus regulation in Canada, he would not proceed with proposed amendments to deregulate the bus industry. Instead, he would refer the issue of bus regulation in Canada to a Parliamentary committee for examination.

INDUSTRY EVENTS

Some members of the Canadian bus industry have been quite proactive in leading the trend, noticeable in North America and elsewhere, toward consolidation in bus operations.

In March 1999, the shareholders of Greyhound Lines Inc. of Dallas, Texas, approved a merger with Laidlaw Inc. of Burlington, Ontario. As Laidlaw already owned Greyhound Canada and several other Canadian intercity bus operations, it thus became the largest intercity bus operator in North America. Laidlaw's school bus operations, however, continue to yield the majority of its operating revenues.

In June 1999, Stagecoach Holdings Inc. of Perth, Scotland, took control of Coach USA, of Houston, Texas, through a merger agreement. Coach USA included three Canadian bus operations: Trentway-Wagar (Peterborough, Ontario), Autocar Connaisseur (Montreal) and Erie Coach (London, Ontario).

BUS SERVICES

INTERCITY BUS SERVICE

While intercity bus services account for the bulk of long-distance bus transportation, they represent the smallest segment of the industry in terms of revenues. Intercity services can be sub-divided into scheduled intercity operations and charter services. Charter services include airport, sightseeing and tour services. Most of the large carriers offering scheduled intercity bus services also do charter business.

Intercity services exclusively within a province come under provincial responsibility. Most school bus and urban transit operators in Canada fall into this category. Intercity carriers that operate some interprovincial or international services come under federal jurisdiction. Under the MVTA, responsibility for regulating the operations of extra-provincial bus companies is delegated to the provinces.

The industry's high degree of diversification makes it difficult to accurately ascertain the size of the labour force in intercity and charter bus services. In 1998, intercity scheduled and charter activities employed just under 5,000 employees. However, a significant number of employees in school bus operations also worked in intercity or charter bus transportation activities. An estimated 4,000 motor coaches were used in intercity and charter service in Canada in 1999, compared with the 73,000 buses of all kinds registered in 1999 across Canada in all provincial and territorial jurisdictions. Of this total, school buses represented a significant proportion of registered buses.

CHARTER OPERATORS

Charter bus service usually refers to a bus trip by a group of passengers who all embark and disembark at the same point. The charter operator is generally granted the right to operate trips out of a given location or city with open-ended access to destinations. Operators may offer a broad range of services, such as half-day school trips, three-week excursions, one-way trips and local sightseeing tours.

Charter bus companies earned almost two thirds of their revenues from charter services. Like scheduled intercity carriers, charter carriers generated a significant portion of revenues from other services, including 11 per cent from intercity services and 16 per cent from other passenger services, such as sightseeing, shuttle and transit services.

URBAN TRANSIT

Urban transit services in major Canadian cities and metropolitan areas operated more than 11,000 buses in 1999, including more than 10,000 large buses. The largest urban transit systems are in Canada's largest urban centres, with services offered over a metropolitan area. These large systems are in Toronto, Montreal, Calgary, Ottawa, Edmonton, Winnipeg, Vancouver and Quebec City. Compared to the urban transit systems in these large Canadian centres, all other urban transit services are relatively small in both size and scope of services. Appendix 11-2 lists some important urban transit systems in Canada in 1999. The list is broken down by province and territory.

Urban transit services account for the largest share of the total revenues generated by bus service operations in Canada: 51 per cent in 1998. When subsidies from municipal and provincial governments are included, urban transit services accounted for more than 70 per cent of total bus revenues. Some transit operators also offer school bus services, charter services and accessible services to travellers with disabilities.

MARINE TRANSPORTATION INDUSTRY

Canada's marine industry includes a fleet of Canadian flag operators providing domestic and transborder shipping services. International trade is served largely by foreign flag operators calling at Canada's major ports. In recent years, there have been major policy reforms in the marine sector, and 1999 was no exception. The year was marked by a number of important events, as well as progress on some significant legislative changes.

MAJOR MARINE EVENTS IN 1999

LEGISLATIVE AND REGULATORY CHANGES AND INITIATIVES

Amendment to the *Canada Shipping Act* (Bill S-4), 1998

Bill S-4, *An Act to amend the Canada Shipping Act*, was implemented in Chapter 6 of the Statutes of Canada 1998. Provisions of Bill S-4, which relate to claims for oil pollution damage, were brought into force by an Order-in-Council on May 29, 1999. This was 12 months from the date on which Canada deposited with the International Maritime Organization its instrument of accession to the 1992 Protocols to the 1969 International Convention on Civil Liability for Oil Pollution Damage, and to the 1971 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage.

Review of the Carriage of Goods By Water Act (COGWA)

On December 10, 1999, pursuant to a legal requirement contained in the *Carriage of Goods by Water Act* (1993), the Minister of Transport submitted a Report to Parliament on the review of the Act. The report concluded, based on consultations with industry and provinces, that the Hague/Visby Rules should be retained in the COGWA until the end of the next review period (January 1, 2005).

Shipping Conferences Exemption Act, 1987 (SCEA)

During 1999, Transport Canada initiated consultations with stakeholders on the *Shipping Conferences Exemption Act, 1987* (SCEA) to determine whether the legislation continues to support Canada's goals of promoting international trade and ensuring Canadian shippers have access to adequate international ocean shipping services at reasonable cost.

SCEA exempts certain practices of shipping conferences from the provisions of the *Competition Act*. A shipping conference is an association of liner companies operating under an agreement to provide service on common routes based upon agreed rates and terms of service. Under SCEA, shipping conferences can set ocean freight rates and services collectively, provided that the rates are published in a tariff filed with the Canadian Transportation Agency (CTA) and their conference agreement has been similarly filed.

To promote intra-conference competition and provide shippers with additional options, including pricing options, the Act incorporates provisions for confidential "service contracts" and independent action by individual conference members. The legislation is consistent with that of Canada's major trading partners.

The Act also provides for the Minister of Transport to designate a shippers group to represent the interests of shippers. The Canadian Shippers' Council (CSC) has been so designated. Under the Act, shipping conferences are required to meet with the designated shippers group when requested to do so and are to provide information for the satisfactory conduct of a meeting. It is normal practice that the CSC meet with tariff filing conferences to discuss the conferences' proposed business plans, as well as their rates, surcharges and ancillary charges.

Canada Marine Act: Implementation Status

The *Canada Marine Act* (CMA), which received Royal Assent on June 11, 1998, created a National Ports System made up of independently managed Canada Port Authorities (CPAs). To date, 17 of the 18 ports designated to become CPAs have received their CPA status and have established boards of directors. The implementation dates were presented in Chapter 10, *Transportation Infrastructure*.

A CPA for the Port of Hamilton, the last remaining designated CPA, will be established when the letters patent process is completed. In addition to these original 18 ports, applications for CPA status from two other ports, Belledune and Oshawa were received. Letters patent are under development for the Ports of Belledune and Oshawa.

The Canada Ports Corporation (CPC) has been kept open during the implementation phase of the National Ports System to ensure that all ports have been either transferred to CPA status or divested to local interests. Ridley Terminals, for its part, will become a parent Crown corporation reporting to the Minister of Transport, upon the winding up of the CPC. Over the longer term, the government intends to divest itself of Ridley Terminals when the time is appropriate.

The sections of the *Canada Marine Act* dealing with pilotage and the commercialization of the St. Lawrence Seaway came into force during 1998. For more details, see Chapter 10, Transportation Infrastructure.

Ports Task Force

On June 22, 1999, the Minister of Transport announced the formation of a Ports Task Force to move forward with Justice Willard Estey's vision for a more commercially oriented, contract-based grain handling and transportation system. Headed by the Deputy Minister of Transport, the Task Force studied issues of strategic importance to the ports of Churchill, Prince Rupert, Vancouver and Thunder Bay, as well as to other stakeholders with marine interests affected by the transportation and handling of grain.

The Task Force ran parallel with, and complemented, the work of Mr. Arthur Kroeger, who was appointed by the Minister of Transport to seek consensus among system participants on the changes necessary to implement the grain transportation reform framework set out by Justice Estey.

During cross-Canada meetings, stakeholders consistently stressed the importance of retaining market discipline and commercial principles in addressing port grain transportation and handling issues. In general, they were reluctant to consider quotas, traffic commitments, or measures that could distort the commercial basis of grain movement. On the other hand, confronted with low international commodity prices, many insisted on containing the various costs of doing business, including the cost of federal marine services.

The Ports Task Force Report summarizes the positions of major stakeholders and presents key findings on the issues raised. It was provided to the Minister of Transport in late September 1999 and is now publicly available.

INDUSTRY EVENTS

INTERNATIONAL

There were a number of important events in the international marine sector in 1999.

- Three container lines (Zim, the China Ocean Shipping Company and Norasia) made Vancouver their first port of call inbound from the Far East. CN and CP Rail provide dedicated double-stack rail services to move containers to inland destinations in Canada and the US.
- The Port of Vancouver was hit by two work stoppages — a truckers' strike in the summer and a lockout of longshoremen in November. Despite this, the port announced in early December that it would still handle a record one million TEUs (Twenty-foot Equivalent Units) in 1999.
- There was a surge of new entrants into the transpacific liner trades, reflecting improved rates and traffic levels. These included such lines as: Norasia, FESCO, the Mediterranean Shipping Company, Trans-Pacific Line, Great Western Steamship Company and CMA/CGM. In addition, two other lines, Zim and Evergreen, each added a new string of vessels to their existing services.
- The *US Ocean Shipping Reform Act* of 1998 came into force on May 1, 1999. It grants the right of confidential contracting between individual conference lines and shippers.
- Transpacific Westbound Rate agreement (TWRA) and Asia North America Eastbound Rate Agreement (ANERA) — the main shipping conferences on the US transpacific routes — were dissolved in the spring of 1999, partly in reaction to the new US ocean shipping reform legislation. The Canada Westbound Rate Agreement was also dissolved at this time.
- Maersk Inc. and Sea-Land Services Inc. announced their decision to stay with New York/New Jersey as their main load centre port on the east coast of North America. The ports of Halifax and Baltimore were runners up in the competition.
- Following Sea-Land's departure from the joint service in April 1999, NYK (Nippon Yusen Kaisha) announced that it would join the joint service offered by Maersk and P&O Nedlloyd Ltd. between Montreal and Europe.
- The Wallenius and Wilhelmsen lines announced the formation of a joint operating company to handle their car-carrying and Ro-Ro shipping activities.
- Maersk acquired the international liner services of Sea-Land, its current operating partner in worldwide liner operations.

DOMESTIC

- Algoma Central Corporation increased the size of its tanker fleet with the purchase of the main operating companies and certain assets of the EnerChem Group, including three Canadian-registered tankers.
- Canada Steamship Lines took delivery of the CSL *Niagara*, the first vessel to receive a new forebody in a planned series of three. The hull replacement program is expected to cost about $100 million.
- Groupe Desgagnés registered a new oil tanker, constructed in China, under the Canadian flag. This is the first brand new ship to be added to the eastern Canadian bulk fleet since the mid-1980s.

MARINE FREIGHT TRANSPORT SERVICES

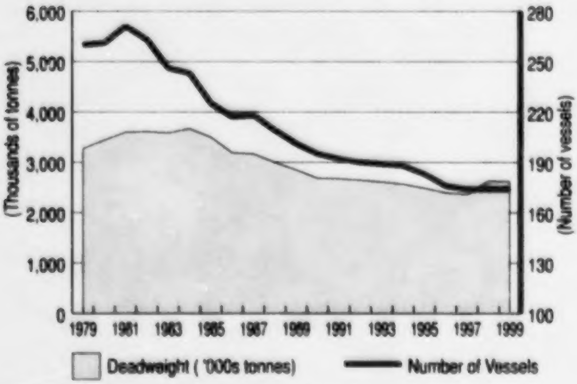
DOMESTIC SERVICES

From 1979 to 1999, the Canadian merchant fleet (defined here as self-propelled vessels of 1000 gross tons and over) went from 3.3 million to 2.6 million deadweight tonnes, losing on average one per cent of its carrying capacity each year. In terms of vessels, the number of ships decreased from 260 to 174 over the period.

In terms of carrying capacity (deadweight), the peak was reached in 1984 with 3.7 million deadweight tonnes and the low in 1997 at 2.4 million tonnes. Figure 11-7 shows the evolution of the Canadian registered fleet from 1979 to 1999.

FIGURE 11-7: CANADIAN REGISTERED FLEET,[1] 1979 – 1999

(Ships of 1,000 gross tons and over)



Note: Deadweight tonnage of vessel carrying capacity in metric tonnes.

[1] *Including self-propelled vessels of 1,000 gross tons and over.*

Source: Canadian Transportation Agency and Transport Canada

From 1979 to 1999, dry bulk carriers have formed the backbone of the Canadian merchant fleet, although their share of total deadweight tonnage went from 84 to 74 per cent over the period. Their number decreased from 134 to 72 units over the period. At the opposite, tankers' share of total deadweight tonnage moved from 9 to 19 per cent, although their number diminished from 36 to 21 vessels.

Table 11-9 reveals the transport capacity of the Canadian registered fleet, by type of vessel.

TABLE 11-9: CANADIAN REGISTERED FLEET[1] BY TYPE, 1979 – 1999

	Deadweight ('000s tonnes)			*Number of Vessels*		
Type of Carriers	*1979*	*1989*	*1999*	*1979*	*1989*	*1999*
Dry Bulk	2,747	2,260	1,943	134	85	72
Tankers	300	384	491	36	33	21
General cargo	149	103	86	30	18	17
Ferries	71	68	70	52	55	56
Other	7	39	33	8	10	8
Total	**3,274**	**2,854**	**2,624**	**260**	**201**	**174**

[1] Self-propelled vessels of 1,000 gross tons and over.

Source: Canadian Transportation Agency and Transport Canada

Eastern Canada

Table 11-10 provides information on vessel type, gross registered tonnage (GRT), area of operation and type of service for companies operating Canadian-flag cargo vessels of 1,000 GRT or above in eastern Canada. Algoma Central Corporation, Upper Lakes Group and Canada Steamship Lines are the three largest operators in the area. Algoma Central, with 28 per cent of eastern Canada's fleet capacity, is the largest inland shipping company in Canada.

Traditionally, Algoma Central operated in the dry bulk trades. In 1998, however, it bought five tankers from Imperial Oil Ltd., the Canadian subsidiary of Exxon Corp. In January 1999, Algoma Central increased the size of its tanker fleet with the purchase of the main operating companies and certain assets of the EnerChem Group, including three Canadian registered tankers. The sale included a part interest in two US-flag tankers as well.

Western Canada

Domestic marine freight services on the West Coast are provided by a large fleet of tugs and barges. (Unfortunately, there is no fleet list available by company that provides GRT for tugs and barges.) While most of the operators concentrate on domestic trade, some also trade internationally between Canadian and US ports. The West Coast also has a significant fleet of ferry vessels that provide links to coastal and island communities.

TABLE 11-10: EAST COAST CANADIAN-FLAG CARGO FLEET – 1,000 GRT AND OVER, 1999

Companies	*Type*	*Number of vessels*	*GRT*	*Area of Operation*	*Type of Service*
Algoma Central Corp.	Bulker	9		Great Lakes/St. Lawrence/East Coast Canada	Dry bulk, liquid bulk
	Self-Unloader	14		Great Lakes/St. Lawrence/East Coast Canada	
	Tanker	8		Great Lakes/Gulf of St. Lawrence/East Coast Canada	
	Total	**31**	**487,447**		
Black Creek Shipping Co. (See Lower Lakes also)	Self-Unloader	1	**10,532**	Great Lakes/St. Lawrence	Dry bulk
Canada Steamship Lines	Bulker	1		Great Lakes/St. Lawrence/East Coast Canada	Dry bulk
	Self-Unloader	12		Great Lakes/St. Lawrence/East Coast Canada	
	Total	**13**	**291,515**		
Canarctic Shipping	Bulker	1	**20,236**	Canadian Arctic from May to November	Dry/Liquid bulk
Canship Ltd.	Other	1	**1,714**	East Coast	
C.A. Crosbie Shipping	Other	2	**5,301**	Canadian Arctic/East Coast Canada/Atlantic Basin	Container, breakbulk, Ro-Ro
ESSROC Canada	Other	1	**6,792**	Great Lakes	Cement
Groupe Desgagnés	Tanker	3		Great Lakes/St. Lawrence/ Arctic/Overseas	Container/breakbulk/ dry bulk/grain
	Other	6			
	Total	**9**	**61,210**		
Imperial Oil	Tanker	1	**1,192**	Great Lakes	Liquid bulk
Irving/Kent Line	Tanker	3	**51,091**	Maritimes	Liquid bulk
LaFarge Canada	Other	1	**6,729**	Great Lakes	Cement
Lower Lakes Towing	Self-Unloader	1	**12,557**	Great Lakes/St. Lawrence	Dry bulk
Mobil Oil, Chevron, Murphy Oil Corp. Partnership	Tanker	1	**76,216**	Maritimes	Liquid bulk
Oceanex Inc.	Other	3	**41,157**	St. Lawrence/East Coast Canada	Container, trailer, Ro-Ro, breakbulk
Parrish & Heimbecker Ltd. (P & H Shipping)	Bulker	2	**32,570**	Great Lakes/St. Lawrence	Dry bulk, grain
N.M. Paterson & Sons	Bulker	7	**113,814**	Great Lakes/St. Lawrence	Dry bulk, grain
Penney Ugland Inc.	Tanker	1	**76,216**	Maritimes	Liquid bulk
Pierre Gagne Contracting	Self-Unloader	1	**20,148**	Great Lakes/St. Lawrence	Dry bulk
Provmar Fuels Inc.	Tanker	2	**5,949**		Liquid bulk
Rigel Shipping Canada Inc.	Tanker	3	**18,786**	St. Lawrence	Liquid bulk
Shell Canada	Tanker	1	**2,758**	St. Lawrence	Liquid bulk
Transport Nanuk	Other	1	**10,034**	Arctic ports/St. Lawrence/International	Heavy lift, Ro-Ro, general, Lo-Lo
Upper Lakes Group	Bulker	13		Great Lakes/St. Lawrence	Dry bulk, grain
	Self-Unloader	8			
	Total	**21**	**390,556**		
GRAND TOTAL		**108**	**1,744,857**		

Source: Lloyd's Register of Ships and Transport Canada data

Three of the top tug and barge companies are owned by Montana businessman Dennis Washington — Seaspan International Ltd., C.H. Cates & Sons Ltd. and Kingcome Navigation Company (formerly owned by MacMillan Bloedel). Seaspan International Ltd. is the largest Canadian tug and barge operator on the West Coast. Along with tug and barge transportation, Seaspan's main areas of business include log barging and ship docking.

Northern Canada

Northern Transportation Company Limited (NTCL) is the major marine operator in northern Canada, an area that encompasses the Mackenzie River Watershed and the Arctic coast and islands. It handles bulk petroleum products and dry cargo for communities, defence installations and gas exploration sites across the region. Its operations cover the Mackenzie River, the Western Arctic, Alaska and Great Slave Lake.

Since 1975, the company has also provided tug and barge operations from the Port of Churchill to service communities in what is now the Kivalliq region of Nunavut. Most recently, NTCL has added tug and barge services to the Eastern Arctic via Valleyfield. (Historically, most cargo to the Eastern Arctic moved from Montreal on freighters as part of the Eastern Arctic sealift administered by the Canadian Coast Guard.)

NTCL is a member of the NorTerra group of companies, a holding company wholly owned by Aboriginals. NorTerra Inc. is managed and owned equally by Inuvialuit Development Corporation, representing the Inuvialuit of the Western Arctic, and Nunasi Corporation, representing the Inuit of Nunavut.

According to *Lloyd's List of Shipowners, Managers, and Managing Agents, 1999-2000*, NTCL owns 87 vessels, including 71 barges (mainly tank barges that carry dry cargo on their decks) and 16 tugs, with a total fleet capacity of 71,449 GRT (Lloyd's does not include vessels under 100 GRT). NTCL's tugs were constructed between 1943 and 1973, and its barges between 1969 and 1975.

Other long-term operators in the Western Arctic include A. Frame Contracting Ltd. and Cooper Barging Service Ltd. The former operates a tug and several barges, and provides seasonal barge service to communities on Lake Athabasca. The latter operates a fleet of three tugs and six barges and provides resupply services on the Mackenzie and Liard Rivers from its base at Fort Simpson.

The Canadian Coast Guard has been managing the Arctic Sealift Program to re-supply coastal communities in the Eastern Arctic (Nunavut) since 1959. Operated on a cost-recovery basis, the service co-ordinates the delivery of cargoes for federal departments, the territorial government, the United States Air Force, municipalities, and private businesses and citizens. The Coast Guard contracts with commercial cargo vessels and tankers to transport dry cargo from its main marshalling base in Montreal, as well as bulk fuel from northern distribution points. Goods are moved out of Montreal during the ice-free summer period to communities in the Eastern Arctic (Nunavut). Coast Guard personnel hire space on ships, act as booking agents, negotiate the lowest possible freight rates with carriers, and monitor the movement of cargo until it is discharged at its destination. The Sealift Program serves 26 communities encompassing Foxe Basin, the High Arctic and South and East Baffin Island. Each year, the program co-ordinates the movement of approximately 10,000 tons of cargo.

INTERNATIONAL SERVICES

Bulk Shipping

Bulk shipping refers to the sector of the marine freight industry that, in general, carries single cargoes in large volume ships. Canadian shippers of bulk commodities such as grain, coal, iron ore and potash rely on bulk shipping operators for the movement of their cargo.

Bulk freight rates are normally set in the highly competitive global open market. In general, the market is made up of time charters (term contracts) and the "spot" market. The terms of charter contracts typically range from one to five years, depending on the volatility of prices. Longer contracts are common during periods of greater predictability in transportation rates, while shorter contracts usually prevail when prices are unstable. The majority of Canada's exports and imports are moved under these types of marine service arrangements.

The "spot" or "tramp" market is made up of short-term contracts covering a specific number of voyages, days or given quantity of cargo. Spot prices are set in open markets and exchanges. Prices depend on supply and demand factors such as vessel size, equipment, trade route and timeliness of the service requirement.

Liner Shipping

Liner services are offered according to published schedules and on specific trade routes with fixed itineraries. In general, liner carriers handle containerized and/or break-bulk cargoes, such as electronics, manufactured goods or frozen produce.

The international liner trade is dominated by large fleets of specialized container vessels operating on major trade routes around the world and is controlled to a large degree by Pacific Rim and Western European interests. While

Canada controls a significant fleet, it is still relatively small. Over the past few years, however, the Canadian presence has been increasing through the acquisition of other foreign lines. (The vessels in the Canadian-controlled international fleet operate under lower cost foreign flags.)

Shipping lines calling at Canadian ports may choose to provide conference or non-conference liner services. Ocean carriers providing liner services on a common trade route often elect to form a shipping conference and collectively agree on rates and/or conditions of service. Under a conference agreement, carriers are exempt from certain practices stipulated in the provisions of the *Competition Act*. They are entitled to this exemption, however, only if the conference has complied with the *Shipping Conferences Exemption Act, 1987* (SCEA).

Non-conference lines, also referred to as "independents," are not subject to SCEA and therefore not required to file agreements or tariffs. They generally offer rates and services that are comparable with conference operators and contribute to a competitive international shipping industry.

Global traffic in containerized cargoes has expanded rapidly over the past decade, rising from approximately 80 million to 150 million containers (TEUs).[7] Much of the gain has been associated with expansion of markets and industrial output of the Asia-Pacific region. When measured in constant dollars, freight rates for ocean container shipping either remained steady or have declined during the last decade.[8]

Services Available to Canadian Shippers

At the end of 1999, the Canadian Transportation Agency had 16 shipping conference agreements on file. Thirteen of these conferences file a tariff with the agency, down from 19 conferences in 1998. The majority operate from eastern Canada to Northern Europe and the Mediterranean. Among the major lines serving Canada as conference members are Atlantic Container Line, Canada Maritime Ltd., Hapag-Lloyd Container Line, P&O Nedlloyd Ltd., Mitsui O.S.K. Lines and the Orient Overseas Container Line.

Table 11-11 lists the 13 tariff-filing conferences serving Canada in 1999. Eleven serve the east coast and six serve the west coast. Six conferences serving the Canadian trades dissolved during 1999, most notably the Canada Westbound Rate Agreement (CWRA). The *US Ocean Shipping Reform Act of 1998*, which came into effect on May 1, 1999, appears to have influenced the decision by several conferences to withdraw from the North American trades. The CWRA's successor on the route — the Canada Westbound Transpacific Stabilization Agreement — is not a tariff-filing conference and therefore not included in Table 11-11.

TABLE 11-11: SHIPPING CONFERENCES[1] SERVING CANADA IN 1999

Australia/Canada Container Line Association (E & W)
Canada/Australia-New Zealand Association of Carriers (E & W)
Canada/Australia-New Zealand Discussion Agreement (E)
Canada Transpacific Stabilization Agreement (E & W)
Canada–United Kingdom Freight Conference (E)
Canadian Continental Eastbound Freight Conference (E)
Canadian North Atlantic Westbound Freight Conference (E)
Continental Canadian Westbound Freight Conference (E)
Japan–East Canada Freight Conference (E)
Japan–West Canada Freight Conference (W)
Mediterranean Canadian Freight Conference (E)
Mediterranean North Pacific Coast Freight Conference (W)
New Zealand/Canada Container Line Association Conference (E & W)

Notes: E = East Coast; W = West Coast.
1 Tariff-filing conferences only.

Source: Canadian Transportation Agency

Shippers benefit not only from competition between conference and non-conference carriers, but also from competition within conferences through the independent action provision in the *Shipping Conferences Exemption Act, 1987*. The provision permits individual conference lines to offer a rate, or services, different from that which is published as part of the conference tariff. In addition, shipping conference rates paid by shippers can be negotiated and signed as a confidential "service contract" between a conference and a shipper. To comply with the Act, service contracts must be filed with the Canadian Transportation Agency.

In 1999, the agency accepted filings for 95 service contracts from seven conferences, down significantly from the 146 service contracts filed in 1998. The contracts applied to both inbound and outbound traffic and to origins/destinations on both the east and west coasts of Canada. The majority, however, applied to the east coast. The average duration of the contracts was one year.

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[7] *Discussion Document on Regulatory Reform in International Maritime Transport*; Maritime Transport Committee of the OECD, May 1999.

[8] *Discussion Document on Regulatory Reform in International Maritime Transport*; Maritime Transport Committee of the OECD, May 1999, page 48.

MARINE PASSENGER TRANSPORT SERVICES

FERRY SERVICES

Canada's ferry services vary widely in terms of ownership, vessel type and operation. Owners range from small private operators to provincial governments and federal Crown corporations. Vessel types range from small cable ferries to large cruise-type vessels and fast ferries. In addition, some ferries operate seasonally, while others run year-round. Terminal and docking facilities are also variously owned, leased and operated by ferry companies, municipalities, provincial and federal governments, or other private companies.

All major ferry operators in Canada belong to the Canadian Ferry Operators Association (CFOA). As a group, these operators employ approximately 7,650 persons.

Federal Subsidies to Ferry Operations

The 1995 National Marine Policy set out the federal government's goal to make the marine sector more commercially oriented. This initiative is consistent with the government's objective to make Canada's transportation system as a whole more responsive to future commercial challenges by reducing its involvement in the direct delivery of transportation services and allowing the private sector to provide some of them. As such, the government has been considering various ways to cut costs and improve efficiency through new vessel management and procurement practices, commercial operation of vessels, and the streamlining of ferry services.

For example, several of Marine Atlantic's ferry services were commercialized through arrangements with provincial governments or the private sector. Additionally, on June 1, 1997, Marine Atlantic's service between Borden, Prince Edward Island, and Cape Tormentine, New Brunswick, ended with the opening of the Confederation Bridge. The corporation, which will continue to provide the constitutionally guaranteed ferry services between Nova Scotia and Newfoundland, will see its subsidy level drop from $122 million in 1993, to an estimated $28.6 million in 1999.

Federally supported ferry services in Atlantic Canada are now limited to those provided by Marine Atlantic, a federal Crown corporation, and by three private-sector operators: Northumberland Ferries Limited, Bay Ferries Limited and C.T.M.A. Traversier Ltée. The federal government will also continue to provide an annual subsidy to the Province of British Columbia for ferry services in that province.

CRUISE SHIP INDUSTRY

Canada's cruise ship industry continued to grow and diversify in 1999. The Alaskan luxury cruise market, using Vancouver as a base port, continued its upward trend, as did the Canada/New England market. Local Canadian operators also offer a multitude of lock, harbour and river cruises, as well as excursions such as those for whale watching. There is even a stern-wheeler offering daily cruises out of New Westminster, British Columbia, on the Fraser River.

In March 1999, amendments to Canada's *Criminal Code* came into effect, easing restrictions on casino gambling aboard cruise ships. International cruise lines are now able to operate their on-board casinos until they are five nautical miles from a Canadian port of call. Previously, vessels had to close casinos as soon as they reached Canadian territorial waters.

Foreign-based companies dominate extended cruise operations calling at Canada's east and west coast ports. There are two basic categories of extended cruises: the luxury cruise, with a vessel capacity of over 150 passengers; and the pocket cruise, having fewer than 150 passengers.

After the Caribbean and Europe, Alaska is the third largest cruise market in the world. Most luxury cruise vessels sailing to Alaska use the Port of Vancouver as their home port (where passengers embark and/or disembark). The *US Passenger Vessel Act* prohibits foreign-flag vessels from carrying passengers between US ports (i.e. embarking passengers at one US port and disembarking them at another). Trips between Vancouver and Alaska also fit conveniently into a seven-day time frame.

In eastern Canada, luxury cruise ships regularly travel along the eastern seaboard and up the St. Lawrence River to Quebec City and Montreal. They also sail out of New York to Halifax, Saint John and other Atlantic ports. While many of these cruises have traditionally travelled during the fall colour season, summer visits are also becoming popular. Pocket cruises travel the St. Lawrence River between Montreal or Quebec City, and Kingston or Rochester.

The Atlantic Canada Cruise Association forecast a total economic impact of $18.9 million in 1999, for the 19 ports in the four Atlantic Provinces, up from $13.6 million in 1998. In recognition of the increased vessel calls, the Halifax Port Authority opened a dedicated cruise facility in early September, and St. John's, Newfoundland, widened the entrance to its harbour to accommodate larger vessels. Improvements at other ports are also being planned.

OVERVIEW OF MAJOR FERRY SERVICES AND CHANGES

Marine Atlantic Inc. (MAI) — *Ownership:* A federal Crown corporation
Area of operation: Operates the constitutionally guaranteed year-round ferry link between North Sydney, Nova Scotia, and Port aux Basques, Newfoundland, and the seasonal alternative between North Sydney, Nova Scotia, and Argentia, Newfoundland.
1999 events: The federal government conducted a major review to examine the level of service provided by MAI. The review found that its current capacity was insufficient to deal with the forecasted growth in traffic, particularly for the peak season. In December 1999, the Minister of Transport asked MAI to negotiate the procurement of a vessel within the limits set out in its 2000–2004 Corporate Plan, and to report back on specific procurement options as soon as possible.

Coastal Transport Ltd.
Area of operation: Operates year-round passenger/vehicle ferry service to the islands of Grand Manan and White Head, New Brunswick, under contract with the Province of New Brunswick. The ferry to Grand Manan leaves daily from Black's Harbour, New Brunswick, while White Head Island ferry departs several times a day from Grand Manan at Ingalls Head.

Northern Cruiser Ltd. (NCL)
Area of operation: Operated a single passenger/vehicle ferry service between Blanc Sablon, Quebec, and St. Barbe, Newfoundland, from May to January, under contract with the Province of Newfoundland.
1999 events: The Province of Newfoundland called a tender for this service and awarded the contract to a new operator starting in January 2000.

Northumberland Ferries Limited (NFL)
Area of operation: Provides seasonal passenger/vehicle ferry transportation (May 1 to December 20) between Caribou, Nova Scotia, and Wood Islands, Prince Edward Island, under contract with the federal government.

Bay Ferries Limited
Area of operation: Provides yearly passenger and vehicle ferry service between Saint John, New Brunswick, and Digby, Nova Scotia, and seasonal service (June 1 to mid-October) between Yarmouth, Nova Scotia, and Bar Harbor, Maine, under contract with the federal government.

C.T.M.A Traversier Ltée
Area of operation: Provides federally subsidized passenger/vehicle ferry service between Cap-aux-Meules, Magdalen Islands, Quebec, and Souris, Prince Edward Island, during the ice-free period from early April until late January. C.T.M.A. also provides a passenger/cargo ferry service from Cap-aux-Meules to Montreal from April to December and from Cap-aux-Meules to Matane during the winter, under contract with the Province of Quebec.

Newfoundland and Labrador's Department of Works, Services and Transportation
Area of operation: Provides all the intraprovincial and coastal ferry services under contract with private operators. The department has also responsibility for the Labrador Coastal Service, which was formerly provided by Marine Atlantic Inc.

La Société des traversiers du Québec (STQ)
Area of operation: Subsidized by the Quebec transportation ministry, STQ operates five year-round passenger/vehicle ferry services across the St. Lawrence River within the Province of Quebec. STQ also has responsibility for three other provincially subsidized ferry services, which are operated by private companies. These routes include Rivière-du-Loup to Saint-Siméon (operated by CFOA member La Traverse Rivière-du-Loup/Saint-Siméon Ltée), Montmagny to Île-aux-Grues, and Cap-aux-Meules to Île-d'Entrée.

Quebec Ministry of Transportation
Area of operation: Subsidizes a private operator servicing Isle Verte and a water taxi service in St. Augustin. The ministry is also responsible for the adjudication of contracts for transporting supplies to native communities in Northern Quebec.

Ontario Ministry of Transportation
Area of operation: Provides financial support to four year-round ferry operations in eastern Ontario. The Province of Ontario operates the Glenora, and the Wolfe Island to Kingston ferries, while ferry services to Amherst and to Howe islands are operated by their respective township authorities.

Owen Sound Transportation Company (OSTC)
Area of operation: Provides seasonal passenger/vehicle ferry services on Lake Huron between Tobermory, Ontario, and South Baymouth, on Manitoulin Island, from early May until mid-October. OSTC also manages transportation services on Lake Erie between Leamington/Kingsville and Pelee Island, Ontario, and Sandusky, Ohio, from April through December on behalf of the Ontario Ministry of Transportation.

Manitoba Department of Highways and Transportation
Type of service: Operates seven passenger/vehicle ferries, three motor vessels and four cable ferries.
Area of operation: Provides services on lakes and across rivers in the province, including river ferries to Norway House, Matheson Island and Cross Lake.

British Columbia Ferry Corporation (BC Ferries) — *Ownership:* Provincial Crown corporation
Area of operation: The British Columbia government receives a federal grant for the provision of ferry services in coastal waters. BC Ferries is the largest ferry operation in North America, with a fleet of 40 vessels on 26 routes serving 43 marine terminals, as well as seven other sites.
1999 events: On November 6, 1999, BC Ferries' second fast ferry, the PacifiCat *Discovery*, was officially commissioned. The *Discovery* began scheduled service as the lead vessel out of Horseshoe Bay on November 22, 1999. In January 2000, a dedicated fast ferry service will be introduced between Departure Bay and Horseshoe Bay with conventional vessels to provide only supplementary service during peak travel times. The *Discovery* cost $10 million less to build than the first PacifiCat and was completed eight months faster.

British Columbia's Ministry of Transportation and Highways
Area of operation: Operates and maintains British Columbia's inland ferry service and contracts with a private operator for the provision of a tug and barge ferry service. The ministry also subsidizes a private ferry service on one of the province's interior lakes.

On the Great Lakes, the luxury cruise ship *Columbus*, which first visited in 1997, has been joined by the French-owned *Le Levant* and Cunard-Seabourn's *Seabourn Pride*. This could indicate a resurgence in Great Lakes' cruising after a hiatus of over two decades.

AIR TRANSPORTATION INDUSTRY

MAJOR EVENTS IN 1999

INDUSTRY RESTRUCTURING

On August 13, 1999, the federal government issued an Order in Council, using its authority under the *Canada Transportation Act*, that established a special 90-day process to support the orderly restructuring of the Canadian airline industry. During this period, all parties wishing to discuss airline restructuring options with Canada's two major airlines, Air Canada and Canadian Airlines International Ltd., were exempted from the conspiracy provisions of the *Competition Act*. The government took this action for two reasons: to avoid any potential disruptions to the national air transportation system that might have resulted from the weak financial position of Canadian Airlines; and to ensure that all aspects of the public interest were considered in any major airline industry restructuring.

On October 26, 1999, before the 90-day period had expired, the Minister of Transport released "A Policy Framework for Airline Restructuring in Canada." This document detailed the federal government's public policy objectives, which would be achieved through commitments from a dominant carrier, conditions on the restructuring, legislation and regulations.

At that time, the Minister sought the views of parliamentarians by referring the document to the House of Commons Standing Committee on Transport and the Standing Senate Committee on Transport and Communications. Both committees published reports with recommendations in early December 1999.

In addition to stating that safety and service to the travelling public in both official languages are fundamental, the policy framework included five areas of concern to the government. These were Canadian ownership and control, fostering competition, pricing, service to small communities, and rights and concerns of employees. It also outlined a new three-track process for reviewing mergers and acquisitions in the airline industry.

During the 90-day period, three proposals that would have restructured the industry were put forward by the private sector. Of these, only one remained by the close of the 90-day period. This was an offer made on November 5, 1999, by 853350 Alberta Ltd., a corporation owned in part by Air Canada, to acquire all of the common and non-voting common shares of Canadian Airlines Corporation. The proposed acquisition was subjected to a formal review by the Competition Bureau and the Minister of Transport.

On December 21, 1999, the Minister announced that the government was prepared to allow the proposal to acquire Canadian Airlines to proceed on the basis of commitments that had been secured from Air Canada and 853350 Alberta Ltd. and the undertakings that the parties had made to the Commissioner of Competition.

It is expected that this acquisition will result in Canada's two major carriers, although operated separately for the time being, coming under common control. The commonly controlled entities can be expected to offer most of the services and carry the vast majority of passengers and cargo within Canada, the Canada–US market and other international services for the foreseeable future.

MAJOR COMMERCIAL AIR SERVICES

In 1999, scheduled air services continued to be defined largely by the operations of the nation's largest operators, Air Canada and Canadian Airlines. These airlines, in co-operation with their subsidiaries and commercial partners, provided competing networks of domestic, transborder and international air services. Each airline belonged to a global alliance that, through code sharing,[9] can offer travellers a seamless travel experience on one ticket, even if more than one airline within the alliance is part of the itinerary. Table 11-12 provides a more detailed look at global airline alliances.

Canada's large operators of charter air services, including Air Transat, Canada 3000, Royal Air and SkyService, continued to be the price leaders in low-fare long-haul air travel. Overall these operators' importance is not only in terms of market share, but also of the extra capacity they provide and the influence they have on

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[9] Code-sharing is the ability to sell air travel under one airline's name on the flights of another airline. In the international context, code-sharing allows airlines to sell transportation on the network of services of code-share partners as if it was their own. In addition, by co-ordinating their marketing efforts, alliance partners can provide a combined product to the consumer, including common check-in, better co-ordinated connections, and priority baggage transfer.

TABLE 11-12: GLOBAL AIRLINE ALLIANCES, 1999

STAR	*Oneworld*	*Wings*	*Delta/Air France*
Air Canada	Canadian Airlines[1]	KLM Royal Dutch Airlines	Delta Airlines
United Airlines	American Airlines	Northwest Airlines	Air France
Lufthansa	British Airways	Alitalia	AeroMexico
Thai Airways International	Qantas	Continental Airlines	
VARIG	Cathay Pacific	Kenya Airways	
SAS Scandinavian Air System	Iberia	Braathens	
Air New Zealand	Finnair		
Ansett Australia			
All Nippon Airways			
Associated:	*Associated:*	*Associated:*	*Associated:*
Singapore Airlines	Japan Airlines	Air China	Korean Airlines
Asiana Airlines	China Eastern Airlines	Japan Air System	TAM
EVA Airways	Ansett New Zealand	Malaysia Airlines	
Pakistan International Airlines	Air Niugini		
China Airlines	Air Pacific		
China Southern Airlines	Philippine Airlines		
Mandarin Airlines	Aer Lingus		
Korean Air	SwissAir		
Mexicana	Sabena		
British Midland	Asiana		
Austrian Airlines			

[1] Will leave Oneworld in 2000.

Source: Airline Business and Aviation Daily

prices. Charter carriers operate according to a distinct seasonal pattern: in the winter, their flights connect Canadian centres with "sun destinations" in Florida, Mexico and the Caribbean, while in the summer their services operate across Canada and to Europe. This reflects the pattern of leisure travel during these seasons and is complemented by the long-haul domestic services, which they also provide on a year-round basis.

Table 11-13 shows the relative market share of mainline, charter and significant independent airlines in Canada's domestic and international markets in the summer of 1999.

TABLE 11-13: MARKET SHARES OF AIRLINES, JULY 1999

	(Thousands)	(Per cent)				
Domestic Markets	*Average daily seat-kilometres*	*Air Canada and affiliates*	*Canadian Airlines and affiliates*	*Charter Airlines*	*West-Jet*	*First Air*
Transcontinental	81,749	52	37	11	-	-
Western Canada	26,930	29	43	6	22	-
Eastern Canada	28,906	64	27	9	-	-
Northern Canada	3,695	18	54	10	-	18
Total Domestic	**141,278**	**49**	**37**	**10**	**4**	**-**
International Markets	*Average daily seat-kilometres*	*Air Canada and affiliates*	*Canadian Airlines and affiliates*	*Foreign Airlines*	*Charter*	
Transborder	137,635	27	13	54	6	
Atlantic	229,489	26	7	34	33	
Pacific	101,735	14	35	51	0	
Southern	21,957	22	21	18	39	
Total International	**490,816**	**24**	**15**	**42**	**19**	

Source: Estimated by Transport Canada based on published airline schedules and historical data

WestJet took delivery of two additional B737-200 aircraft during 1999, bringing its total fleet to 14 aircraft. These new aircraft were used to add three destinations to its network, Grande Prairie, Prince George and Thunder Bay, and to increase its frequency of service on existing routes. Table 11-14 shows the types of aircraft in the fleet of a number of important Canadian air carriers.

TABLE 11-14: AIRCRAFT OF SELECTED CANADIAN CARRIERS IN PASSENGER SERVICE

Carrier	*Wide-bodied*	*Narrow-bodied*	*Propeller-driven*	*Total*
Air Canada	46	112	0	158
Air Canada affiliates:	-	-	-	-
Air BC	0	5	15	20
Air Nova	0	5	30	35
Air Ontario	0	0	26	26
Air Transat	15	7	0	22
Canada 3000	3	12	0	15
Canadian Airlines International	25	57	0	82
Canadian Airlines International affiliates:	-	-	-	-
Calm Air International	0	0	11	11
Inter-Canadien	-	-	-	-
Canadian Regional	0	29	25	54
Ontario Regional				
Air Georgian				
First Air	0	8	19	27
Kelowna Flightcraft	0	15	9	24
Royal Aviation	4	3	1	8
SkyService	1	3	3	7
WestJet	0	14	0	14
Total	**94**	**270**	**139**	**503**

Source: BACK/Lundkvisk Fleet Database, as of December 31, 1999

A number of carriers acting on behalf of courier operators provided all-cargo air services, including Kelowna Flightcraft, Air Express, All Canada Express and International Charters Canada (ICC). Table 11-15 shows the Canadian carriers operating for US-based courier companies.

TABLE 11-15: CANADIAN CARRIERS OPERATING FOR US-BASED COURIER ENTITIES

US Courier	*Canadian Air Carrier*
Airborne	Regency Airlines Knighthawk Air Express Perimeter
BAX Global	All Canada Express
DHL	All Canada Express Western Express Airlines Airwave
Emery	First Air ICC Canada
TNT	Knighthawk
UPS	Skylink

Source: Transport Canada, Air Policy

Table 11-16 lists the economic licence authorities held in Canada in 1999 and illustrates the number of US-based and other foreign carriers that have the authority to operate to or from Canada on both a scheduled and charter basis.

TABLE 11-16: LICENCE AUTHORITIES HELD AS OF DECEMBER 31, 1999[1]

	Canadian				*Other*	
Type:	*Small*	*Medium*	*Large*	*All-Cargo*	*US*	*Foreign*
Classification						
Domestic	851	29	14	28	-	-
International						
Scheduled	14	29	80	4	62	57
Non-Scheduled	410	21	12	23	757	82
Total Type	1,275	79	106	55	819	139
Total Canadian	1,515					
Total US					819	
Total Other Foreign						139

[1] This represents licence authorities, not the number of carriers; e.g. a carrier can hold multiple licence authorities.

Source: Canadian Transportation Agency

Table 11-17 shows the regional carriers in commercial partnerships with Air Canada and Canadian Airlines at the end of 1999.

TABLE 11-17: AIR CANADA AND CANADIAN AIRLINES REGIONAL CODE-SHARE PARTNERS AS OF DECEMBER 31, 1999

Large Regionals	*Other Partners*
Air Canada	
Air BC	Air Creebec
Air Ontario	Alberta Citylink
Air Nova	Aviation Québec-Labrador
Northwest Territorial[1]	Central Mountain Air
Canadian Airlines	
Air NorTerra[2]	Air Alma
Calm Air	Ontario Regional (Air Georgian)
Canadian Regional	Pacific Coastal Airlines
Inter-Canadien[3]	Region Air
	Air Labrador

[1] owned by First Air.

[2] doing business as Canadian North.

[3] ceased operations November 29, 1999.

Source: Air Canada, Canadian Airlines

REGIONAL & LOCAL AIR SERVICES

In April 1999, two of Air Canada's wholly owned subsidiaries serving Atlantic Canada and Quebec — Air Nova and Air Alliance — completed the consolidation of their operations, which had begun in the fall of 1998. While these carriers continue to operate as separate brands under the management direction of Air Nova Inc., their fleets have been redeployed to better match seating capacity to local demand, including the addition of more air services by Air Alliance, whose operations are more focused on serving Quebec.

Inter-Canadien, an independently owned commercial partner serving Ontario, Quebec and Atlantic Canada within Canadian Airlines' domestic route network, suspended operations on November 29, 1999, due to financial difficulties. Inter-Canadien's commercial partner, Canadian Airlines along with its subsidiary Canadian Regional, and Air Canada and its subsidiaries Air Nova, Air Alliance and Air Ontario, as well as Air Georgian, moved to offer services to most of the communities served by Inter-Canadien.

Independent airlines (i.e. carriers not affiliated with either Air Canada or Canadian Airlines) have been reluctant to compete directly with regional carriers. As a result, there is little overlap between independent airline services and those of the national networks. While independents are most prominent in the northern parts of Newfoundland and central and western Canada, they have also filled service voids left by regional affiliates. A case in point was the independent's takeover of services to Stephenville, Newfoundland, a region that had previously been served by Inter-Canadien. More recently, some independents (e.g. Regionair and Air Montreal) have pursued more aggressive strategies to compete with regional affiliates. Table 11-18 lists a number of independent airlines and their major bases of operation.

TABLE 11-18: INDEPENDENT LOCAL SERVICE OPERATORS PROVIDING SCHEDULED AIR SERVICES AS OF JULY 1, 1999

Airline	*Major Base(s)*
Air Creebec	Montreal, Timmins and Val d'Or
Air Inuit	Kuujjuaq
Air Montreal	Montreal and Quebec
Air North	Whitehorse
Air Sask	La Ronge and Saskatoon
Air Tindi	Yellowknife
Aklak Air	Inuvik
Athabaska Airways	Saskatoon and Winnipeg
Baxter Aviation	Vancouver Harbour
Bearskin Airlines	Sudbury and Thunder Bay
Contact Air	Fort McMurray
Harbour Air	Vancouver Harbour
Helijet	Victoria Harbour
K.D. Air	Vancouver
Kenn Borek Air	Iqaluit and Resolute
Keystone Air Service	Winnipeg
Labrador Airways	Goose Bay and St. John's
Nakina Air Service	Thunder Bay
North Vancouver Air	Vancouver
Northwestern Air Lease	Grande Prairie and Yellowknife
North-Wright Airways	Norman Wells and Yellowknife
Pacific Coastal	Vancouver
Pem-Air	Pembroke
Perimeter Airlines	Winnipeg
Provincial Airlines	Goose Bay and St. John's
Regionnair	Sept-Îles
Shuswap Air	Vancouver
Skyward Aviation	Rankin Inlet and Thompson
West Coast Air	Vancouver Harbour

Source: Official Airline Guide

GENERAL AVIATION

The general aviation[10] sector comprises all types of private-sector aviation activity except air transportation services. It includes both recreational flying and commercial activities.

General aviation represented about half of all aircraft movements at controlled airports during 1998, although much of the activity was also at non-controlled airports. Recreational flying in its various forms represents the bulk of general aviation activity, underlining the former's importance in civil aviation in Canada. The importance of recreational aviation is also evident by other measures: it accounts for about two thirds of Canada's pilots, three quarters of aircraft registered in Canada in 1999, and represents the largest segment of Canadian civil aviation activity. Further details about recreational aviation can be found in Table 11-19 and Figure 11-8. A summary of personnel licences appears in Table 11-20 and 11-21.

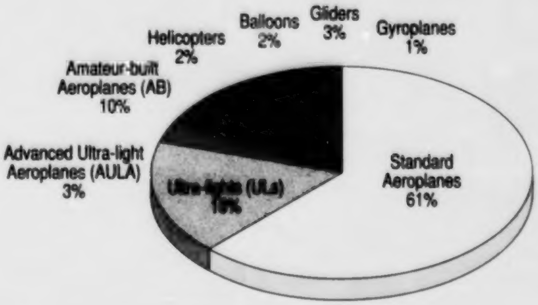
TABLE 11-19: PROFILE OF THE RECREATIONAL AVIATION FLEET AS OF DECEMBER 31, 1999

Type of aircraft	*Total aircraft*
Standard Aeroplanes	13,460
Ultra-lights (ULs)	3,784
Advanced Ultra-light Aeroplanes (AULAs)	562
Amateur-built Aeroplanes (AB)	2,209
Helicopters	387
Balloons[1]	440
Gliders	596
Gyroplanes[2]	182
Total Private registered aircraft	**21,620**

1 Includes airships.
2 Includes ornithopters.

Source: Canadian Civil Aircraft Register

FIGURE 11-8: PROFILE OF THE RECREATIONAL AVIATION FLEET AS OF DECEMBER 31, 1999



Note: Airships and ornithopters are included in the balloon and gyroplane categories respectively.

Source: Canadian Civil Aircraft Register

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10 Gereral aviation has not been formally defined in Canada. Consequently, it has been defined for the purpose of this report as all non-commercial aviation activities.

TABLE 11-20: SUMMARY OF PERSONNEL LICENCES AND PERMITS AS OF DECEMBER 1999

	In Force	*Issued in 1999*	*Male*	*Female*
Aeroplanes				
Private Pilots	27,928	3,193	26,318	1,610
Commercial Pilots	9,604	1,352	9,063	541
Airline Transport Pilots	10,856	597	10,551	305
Total	48,388	5,142	45,932	2,456
Helicopters				
Private Pilots	331	37	317	14
Commercial Pilots	2,795	242	2,735	60
Airline Transport Pilots	699	52	688	11
Total	3,825	331	3,740	85
Permits				
Glider Pilot	5,969	408	5,246	723
Gyroplane Pilot	25	5	23	2
Balloon Pilot	266	12	242	24
Ultra-Light Pilot	2,600	209	2,523	77
Recreational Pilot	1,019	254	951	68
Total	9,879	888	8,985	894
Other Licences				
Flight Engineers	527	14	517	10
Air Traffic Controllers	2,034	28	1,887	147
Total	2,561	42	2,404	157
Total Licences & Permits	**64,653**	**6,403**	**61,061**	**3,592**

Source: Transport Canada, Safety & Security

TABLE 11-21: PERSONNEL LICENCES AND PERMITS BY PROVINCE, DECEMBER 1999

	Number of Licences	*Per cent of Total*
British Columbia	12,408	19.2
Alberta	8,262	12.8
Saskatchewan	2,611	4.0
Manitoba	306	4.7
Ontario	20,753	32.1
Quebec	11,036	17.1
New Brunswick	1,046	1.6
Nova Scotia	1,815	2.8
Prince Edward Island	178	0.3
Newfoundland	1,096	1.7
Yukon	292	0.5
Northwest Territories	402	0.6
Other	1,701	2.6
Canada	**64,665**	**100**

Source: Transport Canada, Safety & Security

SPECIALTY AIR SERVICES

The specialty air services sector is made up of a variety of commercial air activities that share one common characteristic: they are not involved in the movement of passengers or cargo between two points. This sector's activities include flight training, parachute jumping, glider towing, aerial fire fighting, aerial inspection and construction, aerial photography and surveying, advertising, weather-sounding and crop spraying. Transportation of human organs for transplant, forest fire management and heli-logging are other activities which use specialty air services. In addition, air-cushion vehicle services are included in this category. While there are some large companies in this sector, such as Canadian Helicopters, many are very small operators serving local markets.

BUSINESS AVIATION

The business aviation sector continued to grow in 1999, with manufacturers reporting increases in deliveries and some backlog orders. One factor helping is "fractional ownership", whereby individuals or businesses who would not otherwise own an aircraft by themselves, share its use by selling units of flight time. Fractional ownership programs in Canada are regulated as commercial air services.

APPENDIX 11-1

RAILWAY OPERATORS BY REGION, 1999

	BC	*Alta*	*Sask*	*Man*	*Ont*	*Que*	*NB*	*NS*	*Nfld*
Transcontinental	CN CP	CN CP	CN CP	CN CP	CN CP	CN CP	CN CP	CN	
Regional and Local	BCOL E&N OKAN SRY	ARI RCW RLW RMN	SRC CTR HBR	CEMR GWWD HBR SMR	AC BCRY[4] GEXR GJR HCRY NAR[4] OCRR OLO ONR ROV RSO OSR STER	CCFG[4] CDAC CFBC CFC CFM CFQG CFRR CFRS CRC MR NCR NV[1] QNSL QSR ROV SLAR	EMR NBS NER	CBNS DVR WHR	QNSL
Terminal or Switching					ETR PCHR	Arnaud			WLR
US Railways	BN UP			BN[2]	CSXT NS[1]	CSXT[5]	BAR		
Passenger or Commuter	VIA[2] AMTRAK[2] BCR BC TRANSIT	VIA[2]	VIA[2]	VIA[2]	VIA[3] GO	VIA[2] AMTRAK[2] AMT[2]	VIA[2]	VIA[2]	

Note: A number of bridge or terminal companies are not identified here, nor are subsidiaries of other companies. A number of rail tourist operations including the WPY, WSJR and GCRT have also not been included. Note that RMN also operates into the NWT.

1 Running rights, no track owned in Canada
2 Running rights
3 Running rights and owned trackage
4 Non-operating, owned trackage only
5 Prior to June 1, 1999, Conrail

LEGEND

AC	Algoma Central
AMT	Agence Métropolitaine de Transport
ARI	Alberta RailNet Inc.
Arnaud	Arnaud
BAR	Bangor & Aroostock
BCRY	Barrie – Collingwood
BCOL	BC Rail
BN	Burlington Northern
CDAC	Canadian American
CBNS	Cape Breton & Central Nova Scotia
CCFG	Chemin de fer de la Gaspésie
CEMR	Central Manitoba
CFBC	Chemin de fer de la Baie-des-Chaleurs
CFC	Chemin de fer Charlevoix
CRC	Cartier
CFM	Chemin de fer de la Matapédia
CFQG	Chemin de fer Québec-Gatineau
CFRR	Chemin de fer Rivière-Romaine
CFRS	Chemin de fer Roberval-Saguenay
CSXT	CSX
CTR	Carlton Trail
DVR	Devco
EMR	Eastern Maine
ETR	Essex Terminal
GCRC	Great Canadian Railtours
GEXR	Goderich & Exeter
GJR	Guelph Junction
GWWD	Greater Winnipeg Water District
HBR	Hudson Bay
HCRY	Huron Central

MR	Mirabel Railway
NAR	Nepean & Arnprior
NBS	New Brunswick Southern
NCR	Nipissing Central
NER	New Brunswick East Coast
NS*	Norfolk Southern
NV*	Northern Vermont
OCRR	Ottawa Central
OKAN	Okanagan Valley
OLO	Ontario L'Orignal
ONR	Ontario Northland
OSR	Ontario Southland
PCHR	Port Colborne Harbour
QNSL	Quebec, North Shore & Labrador
QSR	Quebec Southern
RCW	RaiLink Central Western
RLW	RaiLink Lakeland & Waterways
RMN	RaiLink Mackenzie Northern
ROV	RaiLink Ottawa Valley
RSO	RaiLink Southern Ontario
SLAR	St. Lawrence & Atlantic (Quebec)
SMR	Southern Manitoba
SRC	Southern Rail Co-operative
SRY	Southern Railway of BC
STER	St. Thomas & Eastern
UP	Union Pacific
WLR	Wabush Lake
WSJR	Waterloo St. Jacobs
WHR	Windsor & Hantsport
WPY	White Pass & Yukon

Source: Transport Canada

APPENDIX 11-2

SELECTED URBAN TRANSIT SYSTEMS OF IMPORTANCE TO CANADA

Transit Systems	*City (Region)*	*Province/Territory*	*Fleet Composition*			
			Large Buses	*Small Buses*	*Other Buses*	*Total*
Township Transit Services Inc.	Abbotsford	British Columbia	25	-	33	58
Kamloops Transit	Kamloops	British Columbia	40	-	12	52
Kelowna Bus & Transportation Inc.	Kelowna	British Columbia	38	-	-	38
Nanaimo Regional Transit System	Nanaimo	British Columbia	33	3	10	46
West Vancouver Municipal Transit	W. Vancouver	British Columbia	30	-	-	30
Penticton Transit Service Ltd.	Penticton	British Columbia	20	12	-	32
Powell River Transit	Powell River	British Columbia	8	-	-	8
BC Transit	69 Transit Systems	British Columbia	493	188	6	687
Calgary Transit Division	Calgary	Alberta	619	21	26	666
Edmonton Transit System	Edmonton	Alberta	611	55	196	862
G.P. Transit	Grande Prairie	Alberta	10	-	-	10
Medicine Hat Transit	Medicine Hat	Alberta	10	10	-	20
Saint Albert Transit	Saint Albert	Alberta	34	2	-	36
Strathcona Public Transit	Strathcona	Alberta	34	7	-	41
Moose Jaw Transit System	Moose Jaw	Saskatchewan	9	5	-	14
Regina Transit System	Regina	Saskatchewan	100	-	16	116
Saskatoon Transit Services	Saskatoon	Saskatchewan	108	-		108
Brandon Transit	Brandon	Manitoba	19	3	-	22
Winnipeg Transit System	Winnipeg	Manitoba	535	-	-	535
Barrie Transit	Barrie	Ontario	21	5	-	26
City of Belleville Transit	Belleville	Ontario	15	-	1	16
Brampton Transit	Brampton	Ontario	101	-	-	101
Corporation of the City of Brantford	Brantford	Ontario	24	2	-	26
Burlington Transit	Burlington	Ontario	34	23	-	57
Cambridge Transit	Cambridge	Ontario	25	-	-	25
Cornwall Transit	Cornwall	Ontario	28	25	-	53
Guelph Transit	Guelph	Ontario	36	4	2	42
Kingston Transit	Kingston	Ontario	33	-	-	33
Kitchener Transit	Kitchener	Ontario	105	-	-	105
London Transit Commission	London	Ontario	170	14	-	184
Markham Transit	Markham	Ontario	58	128	-	186
Mississauga Transit	Mississauga	Ontario	298	-	-	298
Newmarket Transit	Newmarket	Ontario	13	3	-	16
Niagara Transit	Niagara	Ontario	-	-	-	0
Orillia City Transit	Orillia	Ontario	7	-	-	7
Oshawa Transit Commission	Oshawa	Ontario	50	-	-	50
OC Transpo	Ottawa-Carleton	Ontario	820	8	2	830
Owen Sound Transit	Owen Sound	Ontario	6	-	-	6
Peterborough Transit	Peterborough	Ontario	32	-	-	32
Pickering Transit	Pickering	Ontario	23	5	-	28
Sarnia Transit	Sarnia	Ontario	23	9	-	32
Sault Sainte Marie Transit	Sault Sainte Marie	Ontario	24	10	-	34
Stratford Transit	Stratford	Ontario	14	3	-	17
Sudbury Transit	Sudbury	Ontario	43	-	-	43
Thunder Bay Transit	Thunder Bay	Ontario	49	-	-	49
Timmins Transit	Timmins	Ontario	20	7	-	27
Go Transit	Metro Toronto	Ontario	218	-	-	218
Toronto Transit Commission	Metro Toronto	Ontario	1,511	140	-	1,651
Vaughan Transit	Vaughan	Ontario	20	3	4	27
Welland Transit	Welland	Ontario	13	2	1	16
Transit Windsor	Windsor	Ontario	85	3		88
Woodstock Transit	Woodstock	Ontario	13	2	1	16
Corporation Intermunicipale de Transport du Saguenay	Saguenay	Quebec	-	-	-	0
Société de Transport de l'Outaouais	Outaouais	Quebec	178	-	-	178
Société de Transport de la Ville de Laval	Laval	Quebec	225	-	-	225
Société de Transport de la Rive Sud de Montréal	Rive-Sud Montréal	Quebec	315	-	-	315
Société de Transport de la Communauté Urbaine de Montréal	Met. Montreal	Quebec	1,690	81	-	1,771
Société de Transport de la Communauté Urbaine de Québec	Met. Quebec	Quebec	531	4	-	535
Corporation Métropolitaine de Transport Sherbrooke	Met. Sherbrooke	Quebec	69	-	-	69
Corporation Intermunicipale de Transport des Forges	Met. Trois-Rivières	Quebec	40	-	-	40
Fredericton Transit Department	Fredericton	New Brunswick	24	-	2	26
Codiac Transit	Moncton	New Brunswick	24	-	-	24
Saint John Transit Commission	Saint John	New Brunswick	45	-	2	47
Halifax Regional Municipality Metro Transit	Met. Halifax	Nova Scotia	158	15	2	175
Kings Transit Authority	Kentville	Nova Scotia	4	-	-	4
Transit Cape Breton Regional Transit Authority	Cape Breton	Nova Scotia	18	4	-	22
Whitehorse Transit	Whitehorse	Yukon	14	-	2	16

Source: Bus Industry Directory 2000

FREIGHT TRANSPORTATION 12

Intelligent Transportation Systems (ITS) are becoming increasingly important in transportation, and particularly for the movement of freight by the trucking industry.

This chapter discusses freight transportation from a modal perspective, looking at domestic, and when possible, international freight movements. This approach gives a sense of the relative use made of each different mode.

This chapter also examines freight traffic by commodity group. Both the rail and truck modes discuss freight in terms of tonne-kilometres, which provides a physical measure of freight movement used to assess trends in traffic. It captures two significant dimensions of freight traffic: volume and distance.

RAIL TRANSPORTATION

The Canadian operations of both CN and CPR experienced a drop in output in 1998. CN registered 154 billion revenue tonne-kilometres, compared with 161 billion in 1997. CPR's revenue tonne-kilometres dropped by 2.6 per cent to 115 billion. Class II carriers, on the other hand, in aggregate, experienced an estimated six per cent increase in output, with 29.9 billion revenue tonne-kilometres in 1998.

As mentioned in Chapter 10, Class I railways are generally defined to include CN and CPR, as well as VIA Rail Canada. Class II railways include those known variously as regional and shortline railways.

CN and CPR both reported increased output for their systems (Canadian and US operations) in 1999 relative to 1998. CN's revenue tonne-kilometres reached 210 billion, up from 202 billion in 1998 (including Illinois Central output). CPR reported 146 billion revenue tonne-kilometres, up from 140 billion in 1998.

Output for Canadian operations in 1999 is expected to be close to 1998 results. Estimated output of Canadian operations in 1999 is 152 billion revenue tonne-kilometres for CN and 114 billion revenue tonne-kilometres for CPR (based on three quarters of data on Canadian operations and four quarters of system data).

RAIL TRAFFIC — TRADE WITH THE US

From 1997 to 1998, rail imports from the US grew by 4.6 per cent, while rail exports to the US grew by 5.2 per cent.

EXPORTS

Exports reached 56.1 million tonnes in 1998, up from 53.4 million tonnes in 1997. As shown in Table 12-1, all commodity sectors, except automotive and chemical, saw increased export flows. Almost half of the growth took place in the forest products sector, where traffic to the US increased by 1.4 million tonnes. New Brunswick alone almost doubled its forest exports to 1.1 million tonnes. Other large increases took place in Alberta (coal and forest products), British Columbia (grain), Nova Scotia (forest products), Ontario (cement, liquid petroleum gas, gasoline and other fuel, and forest products), Quebec (chemicals) and Saskatchewan (potash).

Shares of exports by province in 1998 were virtually unchanged from 1997. Ontario accounted for 29 per cent of rail exports by tonnage, while Alberta, British Columbia, Quebec and Saskatchewan each accounted for between 15 and 19 per cent. Shares of exports by value were also unchanged. Ontario exported 63 per cent of goods by value, followed by Quebec with 15 per cent and British Columbia with eight per cent.

TABLE 12-1: GROWTH IN RAIL EXPORTS AND IMPORTS BY COMMODITY, 1997 AND 1998

	Exports		*Imports*	
	1998 tonnage	*Per cent growth over 1997*	*1998 tonnage*	*Per cent growth over 1997*
Grain	4,012,169	1.5	655,504	25.0
Other agriculture and food	1,419,602	13.5	1,570,532	(0.3)
Automotive	1,941,663	(7.8)	1,291,267	(8.7)
Chemicals	8,891,801	(0.7)	4,317,926	7.5
Coal	464,894	40.3	178,306	19.0
Fertilizers	8,286,833	1.7	81,096	10.8
Forest products	19,618,328	7.7	1,196,339	(0.6)
Manufactured products	1,408,283	16.6	2,445,992	(5.7)
Metals	3,193,770	6.1	1,176,594	(18.4)
Mine products	3,684,789	9.8	1,811,163	39.7
Petroleum products	3,209,724	13.0	713,437	50.6
Total	**56,131,856**	**5.2**	**15,438,158**	**4.6**

Source: Statistics Canada, International Trade Division

Rail tonnage exported from Alberta declined by just over one per cent in 1998, and reported exports from Newfoundland (mostly ores and mine products) declined by over 70 per cent. British Columbia, Quebec and Saskatchewan saw only small increases in exports, while exports from each of Ontario and Manitoba rose by about nine per cent. The largest relative increases were in the Maritime provinces. New Brunswick, Nova Scotia and Prince Edward Island respectively exported 75, 91 and 133 per cent more in 1998 than in the previous year. In each of these three provinces, forest products were the major source of increased export trade.

IMPORTS

Rail imports reached 15.4 million tonnes in 1998, up from 14.8 million tonnes in 1997. Table 12-1 shows that there were slight declines in the imports of agricultural and food products (other than grain) and forest products in 1998. The automotive, metals and manufactured goods sectors had a sharper decrease in imports.

Increased imports were recorded from 1997 to 1998 for chemicals (plastics and rubbers), ores and mine products (mostly stone and limestone), grain, gasoline and fuel. The 50 per cent increase in petroleum imports is due to traffic from the US North East into Ontario.

According to trade import data, which records provinces of customs clearance, Ontario's share of total imports by tonnage dropped from 53 per cent in 1997 to 48 per cent in 1998. Quebec's share was fairly steady at just under 15 per cent, while British Columbia's share nearly doubled to 12.5 per cent.

Share of imports by value was mostly unchanged in 1998, except for a three per cent shift from Ontario (69 per cent of total imports) to Alberta. Other than Quebec and Alberta, with 12 and eight per cent of imports by value, respectively, all other provinces recorded steady shares of fewer than five per cent.

Of all the provinces, British Columbia showed the largest increase in imports by rail, with 75 per cent more tonnes brought in (cleared) in 1998 than in 1997 (mostly stone and limestone). Alberta, Manitoba, New Brunswick and Quebec also showed import increases of about ten per cent or more. Ontario, Saskatchewan and Nova Scotia showed a decrease in imports of about 5, 24 and 27 per cent, respectively.

RAIL TRAFFIC — OVERSEAS TRADE

A significant amount of rail traffic each year consists of shipments to and from marine ports. In 1998, this traffic accounted for about 115 million tonnes of goods shipped by rail.

RAIL–MARINE EXPORTS

In 1998, Class I railways carried 72.1 million tonnes to Canadian port facilities for export. Approximately 79 per cent of these shipments were made up of bulk products, including coal (33 million tonnes), grain (20 million tonnes), potash (4.3 million tonnes) and sulphur (2.7 million tonnes). A further 9.3 per cent was accounted for by mixed commodities shipped in intermodal units (4.5 million tonnes) and forest products (2.2 million tonnes). Of all goods carried to marine ports, 1.8 million tonnes originated in the US, and 95 per cent of these were in intermodal units.

In addition to these rail–marine exports, the iron ore railways in Labrador and Quebec sent about another 34 million tonnes to export positions along the St. Lawrence River.

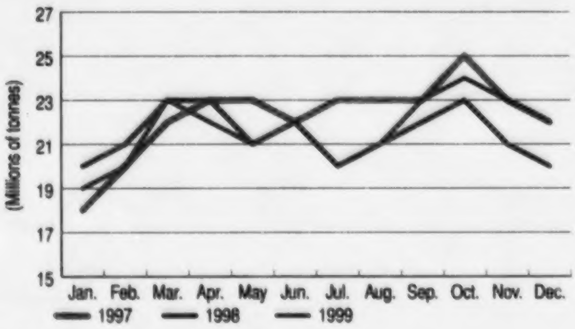
RAIL–MARINE IMPORTS

Class I railways brought about 7.1 million tonnes of goods inland from Canadian ports in 1998. Approximately 5.2 million tonnes of mixed commodities in intermodal units, together with 1.1 million tonnes of phosphate rock, accounted for 89 per cent of these shipments by weight. Of the intermodal tonnage, about 36 per cent continued on to destinations in the US, while Ontario and Quebec were the destinations for 2.1 million and 0.8 million tonnes, respectively. The phosphate rock shipments originated entirely from the Port of Vancouver and were sent to destinations in Alberta.

RAIL TRAFFIC — COMMODITY SECTORS

Rail traffic classified by commodity sectors — including grain, fertilizers, ores and mine products, coal, forest products, industrial products and intermodal products — made up 97 per cent of rail traffic in Canada in 1999. Flows in the first three commodity groups declined from 1998 levels, while the other four groups (especially coal and intermodal) saw increased traffic. Total traffic rose in 1999 to 260 million tonnes, up from 257 million tonnes in 1998. Figure 12-1 shows the total monthly commodity loadings by rail from 1997 to 1999.

FIGURE 12-1: TOTAL MONTHLY LOADINGS BY RAIL, 1997 - 1999

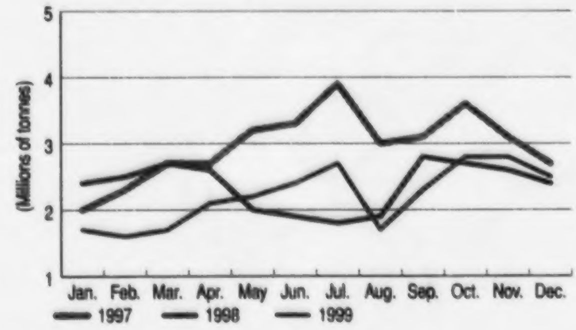


Source: Statistics Canada, Cat. 52-001; Transport Canada

GRAIN

In 1999, with the continued overabundance of grain on world markets, grain traffic was about six per cent lower than in 1998. Total annual tonnage was 26.5 million tonnes, down from 28 million tonnes in 1998. Figure 12-2 shows three years of grain loadings, including 1997's bumper crop.

FIGURE 12-2: MONTHLY GRAIN LOADINGS BY RAIL, 1997 - 1999



Source: Statistics Canada, Cat. 52-001; Transport Canada

FOREST PRODUCTS

Forest products had a strong year in 1999, with flows about 7.5 per cent greater than in 1998. This increase reflected a 14 per cent increase in traffic of processed forest products, to 22.5 million tonnes. Flows of unprocessed products remained flat at 16.6 million tonnes. In total, forest products accounted for 15 per cent of total rail traffic in 1999.

ORES AND MINE PRODUCTS

While iron ore made up 58 per cent of the ore and mine products sector in 1999, shipments were down 17 per cent from 1998 to 32.3 million tonnes, accounting for only 12 per cent of total traffic, compared with 15 per cent in 1998. Softness in world steel markets and decisions by steel makers to draw down their inventories may have contributed to the drop in demand for Canadian iron ore.

Flows of other ores and mine products reached 22.9 million tonnes in 1999, up slightly from the 21.5 million tonnes shipped in 1998. Among these products, gypsum was the lead performer, with 5.1 million tonnes on the rail system, up 53 per cent. Alumina, bauxite and other aluminum ores accounted for 5.2 million tonnes loaded, up 13 per cent.

FERTILIZERS AND FERTILIZER MATERIALS

In 1999, this sector as a whole generated less traffic than in 1998, but maintained a share of ten per cent of total rail traffic. Potash traffic declined by 0.5 million tonnes in 1999, due to lower production levels and low grain prices, which affected sales negatively. Sulphur and other fertilizer shipments rose by five per cent to 12.5 million tonnes.

Imports of phosphate rock to Alberta via Vancouver dropped off in 1999, as a domestic source was discovered near Kapuskasing, Ontario. There were no phosphate rock loadings recorded until August 1999. Almost 94,000 tonnes moved in the latter part of the year, compared with a total of 1.1 million tonnes in 1998.

COAL

After ores in aggregate, coal products had the largest share of rail traffic in 1999, with 16.6 per cent of the tonnage. Coal and coke flows increased by 10.5 per cent to 43.3 million tonnes in 1999.

INDUSTRIAL PRODUCTS

Automobiles and parts, refined petroleum products, chemicals and metals continue to account for an increasing proportion of rail traffic in Canada, making up 14.8 per cent of flows in 1999.

Automotive products accounted for only 13 per cent of the industrial products sector; however, this sub-sector saw the biggest increase in traffic, with 1999 movements reaching 4.9 million tonnes, up 38 per cent from 1998. Flows of ferrous and non-ferrous metals increased by almost three per cent to 9.2 million tonnes. Petroleum and chemical traffic declined by nearly four and six per cent, to 10.9 and 13.5 million tonnes, respectively.

INTERMODAL

After a lull in growth in 1998, intermodal traffic leapt by 35 per cent in 1999. Container-on-flat-car tonnage rose to 22.1 million tonnes, 36 per cent higher than in the previous year. Trailer-on-flat-car traffic, after a 28 per cent decline in 1998, recovered 16 per cent to 1.6 million tonnes. The

STAKEHOLDER CONSULTATIONS ON GRAIN TRANSPORTATION SYSTEM RESTRUCTURING

In a May 1999 policy statement, the Minister of Transport announced that the federal government agreed with Justice Estey's vision for the system. At the same time, the Minister appointed Mr. Arthur Kroeger to seek consensus among all major system participants on the changes necessary to implement the 15 point reform framework set out in 1998 by Justice Estey.

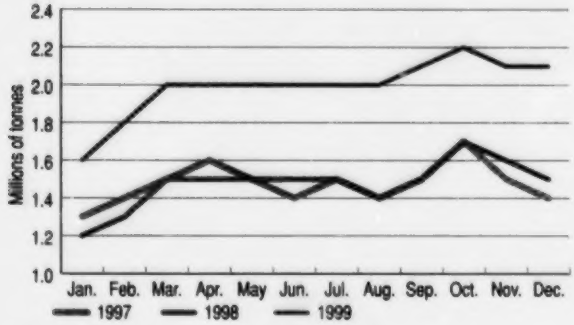
A Steering Committee made up of 14 stakeholder groups managed the process, while 3 Working Groups — Rates and Revenues, Commercial Relations, and Competition and Safeguards — dealt with the technical aspects of implementing each recommendation. Consensus was reached on a number of issues; however, on some important subjects, it was impossible to bridge the divergent views. The following is a summary of the report's conclusions.

- On the legislated ceiling for rail freight rates charged for transporting grain, consensus was reached on many technical details tied to a revenue cap but not on its initial level or on how to treat future railway productivity gains. The Steering Committee concluded that tariff details should:
  - be delimited between shippers and railways;
  - be tied to needs;
  - be distance-related, with exceptions recognizing and encouraging efficiencies;
  - differ with differences in service;
  - be transparent and non-discriminatory without precluding the use of confidential contracts; and
  - permit seasonally and commodity-specific discounting. It also concluded that there was a need for measures to address concerns of captive shippers.
- On the questions of railway competition and safeguards a number of options were developed to be presented to the government. These included:
  - the implementation of an open access plan;
  - enhanced inter-switching and more effective competitive line rates; and
  - an after-negotiations two-tier last resort Final Offer Arbitration process, with a one-arbitrator simple 30-day process for freight rate disputes up to $750,000 and a one- to three-arbitrator 60-day process for larger disputes.
- With respect to the process for western branch line discontinuance, the following process was proposed: a 12-month notice period, a 60-day period to advertise a sale followed by a negotiation period of up to 6 months and, if unsuccessful, reverting back to the current Canadian Transportation Act procedures. Stakeholders also suggested that the railway abandoning a line in a municipality should pay adjustment assistance to the municipality. Line transfer negotiations between railways and short line/community groups could take place at any time. To enhance branch line transfers, stakeholder's proposals related to several factors:
  - the preparation of a comprehensive set of guidelines by Transport Canada through consultations to facilitate negotiations;
  - the establishment of the net-salvage value of the line at the beginning of the transfer process to expedite the negotiations;
  - a third-party mediation process; and
  - a right of recourse when a railway is not negotiating in good faith.
- For producer cars, the need to keep current legislative provisions was widely accepted, and satisfactory conclusions were reached on a number of technical questions related to the provisions of producer cars in a commercial contract-based system.
- Stakeholders proposed two models for changing the logistics chain, each offering greater scope to market forces.
  1. Under one model, the Canadian Wheat Board (CWB) negotiates directly with railways and terminals for capacity (including volume, service and price), and signs framework agreements with grain companies that include specified incentives and/or penalties for performance. Tenders, performance awards or producer contract sign-ups are then used to allocate sales awards to grain companies to supply CWB requirements. Under this model, the allocation of rail car orders to specific geographic regions is done by the CWB. Terminal capacity and car supply agreements are tied to CWB sales. Concerns raised with this model centred on accountability.
  2. The other model, drawn from Justice Estey's recommendations, assumes the existence of a competitive rail environment. To determine overall capacity requirements and assign responsibility for supply of needed grain by the CWB to the grain companies, which in turn have to contact railways for services, the stakeholders propose an annual meeting be held at the beginning of the crop year. Grain companies use price incentives to attract grain from producers. Concerns with this model centred on the CWB's need to determine rail and terminal capacity to make sales in confidence.
- Lastly, the report recommended that a review and sharing of productivity gains take place after the reform's changes have been implemented.

share of total traffic of this sector rose from 6.9 per cent in 1998 to 9.1 per cent in 1999.

Figure 12-3 shows monthly loadings for intermodal traffic between 1997 and 1999.

FIGURE 12-3: MONTHLY INTERMODAL LOADINGS BY RAIL, 1997 - 1999



Source: Statistics Canada, Rail in Canada, Cat. 52-216; Transport Canada

TRUCKING TRANSPORTATION

DOMESTIC VS INTERNATIONAL TRAFFIC

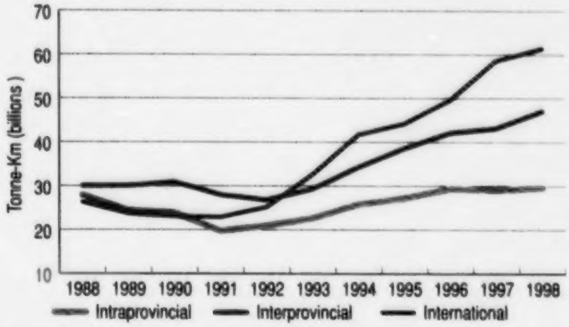
Since 1991, the number of tonne-kilometres attributed to for-hire carriers has increased steadily in both the domestic and international markets. Domestically, tonne-kilometres rose from 47.7 billion to 76.7 billion from 1991 to 1998, an average annual increase of 7.0 per cent. Internationally, tonne-kilometres rose from 22.9 billion to 61.4 billion, an average annual growth of 15.1 per cent over the same period.

In light of these increases, the relative importance of domestic and international markets in the total traffic of Canadian-based for-hire trucking firms has been shifting in the past decade. Since 1991, the domestic share of total tonne-kilometres has decreased by 15 per cent, resulting in a corresponding increase in the international share of total tonne-kilometres.

Figure 12-4 shows the growth in annual truck traffic in tonne-kilometres between 1988 and 1998.

Table 12-2 shows the amount of for-hire truck traffic by sector and province for 1998. Ontario accounted for the largest share of truck traffic in both domestic and international markets, with 51.3 billion tonne-kilometres, or 37.1 per cent of the total tonne-kilometres.

FIGURE 12-4: TOTAL TRUCK TRAFFIC, ANNUAL TONNE-KILOMETRES, 1988 - 1998



Source: Statistics Canada, Trucking in Canada, Cat. 53-222; Transport Canada

TABLE 12-2: FOR-HIRE TRUCK TRAFFIC BY SECTOR AND PROVINCE, 1998

(Millions of tonne-kilometres)

	Intra-provincial	*Inter-provincial*	*Inter-national*	*Total*	*Per cent share*
Ontario	10,826	14,496	25,934	51,256	37.1
Quebec	6,022	8,260	14,447	28,729	20.8
Alberta	4,933	7,241	7,079	19,253	13.9
Manitoba,Saskatchewan and Territories	2,146	8,800	5,007	15,953	11.6
British Columbia	4,133	5,026	5,000	14,159	10.3
Atlantic Provinces	1,557	3,253	3,929	8,739	6.3
Total:	**29,617**	**47,077**	**61,396**	**138,090**	**100.0**

Notes: Totals may not add due to rounding; Canadian-domiciled for-hire Class I and II carriers. "International" includes exports and imports; "Interprovincial" are loadings based. "Territories" include Yukon and NorthWest territories.

Source: Statistics Canada, Special Tabulation

Table 12-3 shows the northbound and southbound flow of traffic between US regions and Canadian provinces in 1998. Deliveries to and from the US central states accounted for the largest share of traffic with 22.1 billion tonne-kilometres, or 36.0 per cent of the total tonne-kilometres.

TABLE 12-3: FOR-HIRE TRUCK INTERNATIONAL TRAFFIC BY MAJOR FLOWS AND PROVINCE, 1998

(Millions of tonne-kilometres)

Province	*US Region*[1]	*Southbound movements "Exports"*	*Northbound movements "Imports"*	*Total*	*Per cent Share*
Ontario	US Central	6,942	4,647	11,589	18.9
Ontario	US South	3,487	3,351	6,838	11.1
Prairie Provinces	US Central	3,132	2,958	6,091	9.9
Quebec	US Central	2,794	1,605	4,400	7.2
Quebec	US South	2,546	1,732	4,278	7.0
Quebec	US North-East	2,847	1,410	4,257	6.9
Ontario	US North-East	2,351	1,640	3,991	6.5
Ontario	US West	1,571	1,851	3,422	5.6
British Columbia	US West	1,860	1,329	3,188	5.2
Sub-total		27,530	20,523	48,053	78.3
Other Movements		8,036	5,307	13,343	21.7
Total		**35,567**	**25,830**	**61,396**	**100.0**

Note: Totals may not add due to rounding; Canadian-domiciled for-hire Class I and II carriers.

[1] US North-East includes New England and Middle Atlantic states.
US Central includes states bordering the Great Lakes and other central states such as North Dakota, South Dakota, Nebraska, Iowa, Kansas and Missouri.
US West includes Pacific states and Western Mountain states.

Source: Statistics Canada, Special Tabulation

TRUCK TRAFFIC BY COMMODITY

In terms of transportation revenues, general freight (primarily manufactured products and fabricated materials) accounted for a significant share of truck traffic in 1998. Domestic traffic in this commodity group generated close to $2.7 billion in revenues, or 41.5 per cent of all domestic revenues. International traffic generated approximately $2.2 billion, or 46 per cent of all international revenues. Based on domestic and international traffic combined, the next most important commodities transported were food products, with about $1.8 billion, or 16.2 per cent of the total, and forest products, with $1.6 billion, or 14.3 per cent of the total. Together, these three commodities accounted for almost three quarters of the carriers' revenues in 1998.

Table 12-4 shows the revenues of for-hire trucking activity by major commodity group for 1998.

TABLE 12-4: FOR-HIRE TRUCKING ACTIVITY REVENUES BY COMMODITY GROUP, 1998

	Domestic		International		Grand Total	
Commodities	*(Millions)*	*Per cent*	*(Millions)*	*Per cent*	*(Millions)*	*Per cent*
General Freight	$2,657.1	41.5	$2,243.1	46.3	$4,900.2	43.6
Food Products	1,186.5	18.5	633.2	13.1	1,819.6	16.2
Forest Products	871.2	13.6	735.4	15.2	1,606.6	14.3
Automotive Products	350.5	5.5	561.3	11.6	911.8	8.1
Steel and Alloys	395.8	6.2	359.7	7.4	755.4	6.7
Chemical Products	368.3	5.8	220.3	4.5	588.5	5.2
Petroleum Products	343.6	5.4	42.0	0.9	385.6	3.4
Non-metallic Minerals	205.4	3.2	44.9	0.9	250.3	2.2
Metals / Ores	22.9	0.4	7.3	0.1	30.2	0.3
Total Revenues	**$6,401.2**	**100.0**	**$4,847.2**	**100.0**	**$11,248.4**	**100.0**

Source: Transport Canada; Statistics Canada, Special Tabulation from For-Hire Trucking Survey, Commodity Origin/Destination

In terms of traffic volume measured by tonne-kilometres, general freight accounted for 26.4 billion tonne-kilometres domestically, or 34.5 per cent of all domestic traffic, and 24.3 billion tonne-kilometres to the US and Mexico, or 39.5 per cent of all international traffic. Combined, this represented almost 37 per cent of total tonne-kilometres in 1998.

In aggregate, general freight, food products and forest products accounted for almost 75 per cent of carriers' total tonne-kilometres in 1998. Table 12-5 shows the volume of for-hire trucking traffic by major commodity group for 1998.

Two major sources were responsible for the growth in freight traffic carried by trucks: the general freight sector, where domestic activities not only surpassed transborder volumes in terms of tonne-kilometres, but were also responsible for much of the growth in freight traffic; and

INTELLIGENT TRANSPORTATION SYSTEMS APPLICATIONS AND THE CANADIAN TRUCKING INDUSTRY

Given the increasing focus on Intelligent Transportation Systems (ITS), Transport Canada launched a study to assess best practices and state-of-the-art applications currently in use in the motor carrier industry. A summary of the study, which was completed in 1999, follows.

ITS can be defined as the application of advanced information processing, communications, sensing and control technologies to improve the way in which ground transportation systems are designed, built, managed and operated.

These technologies are being considered by the motor carrier industry as a way to enhance safety and efficiency of passenger and freight transportation operations, and to promote competitiveness. ITS applications have also been introduced to alleviate problems associated with increased traffic congestion, instead of capital expenditures to expand existing highway infrastructure.

Possible Barriers To Deployment of ITS Technologies

Despite carriers' awareness of the benefits of ITS technologies to their operations, a number of impediments exist to broader deployment of ITS.

- **Cost of investment in technology** — Because rapid technological changes make products quickly outdated, products must be sold at prices high enough to cover developmental costs, which deter many carriers from adopting them.
- **Knowledge of ITS** — The lack of knowledge about ITS also impedes investment, and Canada currently lacks the outreach programs that might help increase awareness.
- **Privacy issue** — Trucking companies are concerned about the storage of private and confidential commercial information.
- **Commercial issue** — Suppliers of ITS technology are concerned about protecting their intellectual property rights, as well as their market share.
- **Resistance to change** — Workers often equate automation with a potential loss of jobs, and therefore do not wish to change the way they do business.
- **Standardization** — The lack of standardization and the proprietary nature of some of the technologies and products have made it difficult, if not impossible, for the industry to integrate their company's systems with the in-vehicle devices. Similarly, operational policy and strategies are often developed with little consultation, resulting in individual institutions having similar but different requirements.

Current Uses of ITS Technology in Canada

There is a significant degree of adoption of ITS technology in the Canadian trucking industry. It is, however, generally limited to large companies operating a fleet of 100 trucks or more. The driving force behind its use is competitiveness considerations, particularly for carriers that have operations with a North American scope. Furthermore, adopting ITS technology improves their productivity and safety records, giving them a competitive edge in the market. There are several types of ITS applications in use in the Canadian trucking industry.

INTELLIGENT TRANSPORTATION SYSTEMS
APPLICATIONS AND THE CANADIAN TRUCKING INDUSTRY (Continued)

- **Computerized information system** — A high percentage of Canadian carriers use computerized management information systems to manage their operations.
- **On-board driver monitoring system** — This is an on-board computer with a serial PC interface used to transfer data to the fleet management computer to assess driver and vehicle performance.
- **Satellite tracking** — This is an on-board vehicle device that sends a periodic signal to the satellite. The communication satellite then establishes the approximate location of the vehicle, relaying this information to the dispatch office's tracking software.
- **Global Positioning System (GPS)** — With a GPS, the vehicle's on-board receiver triangulates its position based on signals received from three or more GPS transmitting satellites. The on-board computer then transmits the vehicle location to the dispatcher by communication satellite or other means. The GPS system is also being used to keep track of trailers. Functions such as doors opening or temperature of cargo can also be monitored in real time.
- **Digital pager systems** — Text messages can be sent directly to the driver using the satellite system or the cellular network.

Opportunities for ITS in the Canadian Motor Carrier Industry

Implementing ITS technologies on a national scale requires the full commitment of all levels of government and the trucking industry, and close co-operation between the public and the private sectors. Building on the experience and successes of the pilot projects, ITS deployment has been expanding in North America and can be enhanced to include additional features for future ITS applications in the Canadian motor carrier industry.

- **Roadside CVO stations** — The number of weigh stations capable of electronic bypass could be increased. The number of trucks to be equipped with transponders for toll payment, weigh station bypass and customs clearance are expected to increase significantly over the next few years.
- **Commercial fleet management** — The use of on-board computers could be extended to upload the driver routing slip, customer list, billing information, etc. Technologies used for vehicle tracking and communications could provide a basis for implementing "Mayday" capabilities in emergency situations.
- **Enroute driver information** — Transponders could interface with other on-board devices for display functions to display information to the driver, such as weather, traffic incidents, road sign information, etc.
- **On-board safety monitoring** — Safety systems could monitor the safety status for the vehicle (brakes, lights, tires, air pressure, speed, steering and electrical system), the driver (hours of service, alertness) and cargo (unsafe conditions relating to cargo carried in the vehicle).
- **Commercial vehicle administrative processes** — The carriers could electronically capture information on mileage, fuel purchased, and trip and vehicle data by province (and state), including licences, registrations, operating authority, leasing, insurance, permits, mileage and fuel tax reporting, safety records, audits and credentials.
- **Route guidance** — In-vehicle navigation systems using GPS will be an option for most trucks within a few years, providing vehicle location, mapping, traveller route planning and route guidance.
- **Dangerous goods incident response** — Transponders could enable the tracking of the movement of dangerous goods and provide truck-specific cargo information to enhance the response to dangerous goods incidents.

Conclusions

Commercial vehicle operators and their different agencies have a common interest in deploying ITS applications. However, a number of hurdles have to be overcome to achieve success. The perceived barriers from the motor carrier industry perspective can be addressed by the following types of action.

- **Education** — Increase awareness of the associated benefits of ITS technologies by promoting it through trucking associations and ITS Canada, focused government information campaigns (through vehicle registration and truck driver permit renewals, at roadside inspection stations, border crossings, etc.).
- **Regulatory** — Set guidelines to protect privacy and intellectual property.
- **National ITS Architecture** — Develop a national ITS architecture for integrating various commercial vehicle applications compatible with the US architecture, but taking into consideration the unique needs of Canada.
- **Public/Private-Sector Participation** — Foster co-operation and involvement of all sectors to better balance investments and increase market stimulation.
- **Harmonized Standards** — Develop North American standards and achieve true inter-operability.

TABLE 12-5: FOR-HIRE TRUCKING ACTIVITY TRAFFIC BY COMMODITY GROUP, 1998

(Million tonne-kilometres)

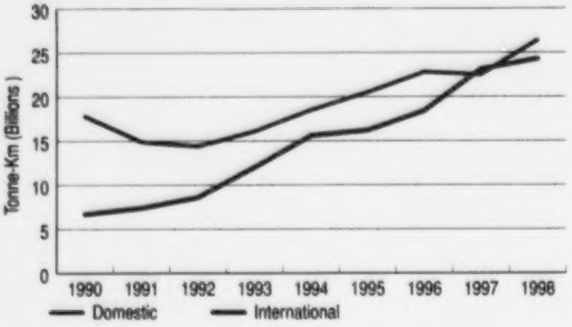
	Domestic		International		Grand Totals	
Commodities	Total	Per cent	Total	Per cent	Total	Per cent
General Freight	26,430.2	34.5	24,270.4	39.5	50,700.7	36.7
Food Products	15,063.6	19.6	9,983.9	16.3	25,047.4	18.1
Forest Products	14,116.1	18.4	13,552.2	22.1	27,668.3	20.0
Automotive Products	1,441.5	1.9	4,380.4	7.1	5,821.9	4.2
Steel and Alloys	6,301.3	8.2	5,044.1	8.2	11,345.5	8.2
Chemical Products	4,177.1	5.4	2,515.4	4.1	6,692.5	4.8
Petroleum Products	5,418.5	7.1	633.2	1.0	6,051.7	4.4
Non-metallic Minerals	3,220.4	4.2	889.0	1.4	4,109.4	3.0
Metals/Ores	525.0	0.7	127.7	0.2	652.7	0.5
Total Tonne-kilometres	**76,693.7**	**100.0**	**61,396.4**	**100.0**	**138,090.1**	**100.0**

Source: Transport Canada; Statistics Canada, Special Tabulation from For-Hire Trucking Survey, Commodity Origin/Destination

the food products sector, which enjoyed significant growth in both domestic and transborder flows.

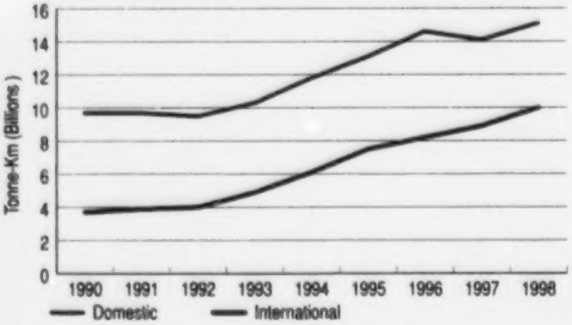
Figures 12-5 and 12-6 compare domestic and international for-hire truck traffic for these two important commodity groups from 1990 to 1998.

FIGURE 12-5: DOMESTIC VS INTERNATIONAL FOR-HIRE GENERAL FREIGHT TRAFFIC, 1990 – 1998



Source: Transport Canada based on Statistics Canada data

FIGURE 12-6: DOMESTIC VS INTERNATIONAL FOR-HIRE FOOD PRODUCTS TRAFFIC, 1990 – 1998



Source: Transport Canada based on Statistics Canada data, For-Hire Trucking Survey Commodity Origin-Destination

TRUCK FLEET

Class 8 heavy trucks include those vehicles with a gross vehicle weight of 15,000 kilograms or more. There was a total of 262,226 Class 8 trucks registered across the country in 1999. To that figure must be added an additional 386,804 "heavy vehicles," which include those vehicles used for picking up and delivering goods and that weigh more than 10,000 kilograms. Three provinces, Ontario, Quebec and Alberta, accounted for 74 per cent of all Class 8 trucks registered in Canada in 1999, and 63 per cent of all registered heavy vehicles.

TABLE 12-6: REGISTERED CLASS 8 TRUCKS AND HEAVY VEHICLES BY PROVINCE/TERRITORY, 1999

	Heavy vehicles	Class 8 Trucks	Total	Per cent of all registered vehicles	Total registered vehicles
Newfoundland	4,056	2,873	6,929	2.8	248,520
Prince Edward Island	2,094	2,515	4,609	6.1	75,260
Nova Scotia	9,453	6,838	16,291	3.1	517,298
New Brunswick	9,417	4,520	13,937	3.2	438,232
Quebec	57,909	32,770	90,679	2.3	3,951,026
Ontario	77,325	98,608	175,933	2.8	6,374,185
Manitoba	9,889	11,053	20,942	3.5	590,866
Saskatchewan	47,481	22,149	69,630	10.1	689,448
Alberta	109,683	61,907	171,590	8.3	2,061,250
British Columbia	57,415	17,286	74,701	3.3	2,268,585
Yukon	1,316	925	2,241	9.0	24,962
Northwest Territories	504	682	1,186	6.5	18,147
Nunavut	262	101	363	14.6	2,479
Total	**386,804**	**262,226**	**649,030**	**3.8**	**17,260,258**

Source: Provincial/Territorial Registration Files submitted to Statistics Canada for the Canadian Vehicle Survey

TRUCK SALES

In 1999, there were 30,984 new Class 8 trucks sold in Canada, establishing a new record for sales of such vehicles. These new truck purchases reflect a pent-up demand following the deferred fleet replacement during the 1990–1992 recession, as well as strong growth in the demand for truck freight services since 1993. Table 12-7 compares the sale of Class 8 trucks by province from 1997 to 1999.

TABLE 12-7: SALE OF CLASS 8 TRUCKS BY PROVINCE, 1997 to 1999

	1997 Sales	Per cent of total	1998 Sales	Per cent of total	1999 Sales	Per cent of total
Newfoundland	157	0.6	129	0.4	150	0.5
Prince Edward Island	32	0.1	46	0.2	45	0.1
Nova Scotia	474	1.7	560	1.9	632	2.0
New Brunswick	1,130	4.2	1,282	4.4	1,437	4.6
Quebec	5,255	19.3	5,682	19.5	6,782	21.9
Ontario	9,783	35.9	11,947	41.1	13,124	42.4
Manitoba	1,491	5.5	1,615	5.6	1,674	5.4
Saskatchewan	1,315	4.8	1,168	4.0	1,107	3.6
Alberta	5,185	19.0	4,402	15.1	3,814	12.3
British Columbia	2,401	8.8	2,265	7.8	2,219	7.2
Canada	**27,223**	**100.0**	**29,096**	**100.0**	**30,984**	**100.0**

Source: Canadian Vehicle Manufacturers' Association

Sales of Class 8 trucks were 6.5 per cent higher in 1999 than in 1998. A number of factors, favourable to heavy truck sales, that were present in 1998 — strong manufacturing output, relatively favourable interest rates, controlled inflation and increased consumer spending — were also present in 1999, all pointing to a strong demand for truck freight transport.

When Canadian sales of Class 8 trucks in a given year are related to the number of registered Class 8 trucks, it gives an idea of the importance of the replacement rate of vehicles in the trucking industry (Table 12-8). Replacement rates vary from one region to another, a situation that would have to be analysed at a micro-level to determine whether or not it is indicative of an appropriate or inappropriate rate of replacement. In Canada as a whole, more than 11 per cent of registered Class 8 trucks in operation during 1999 were new trucks.

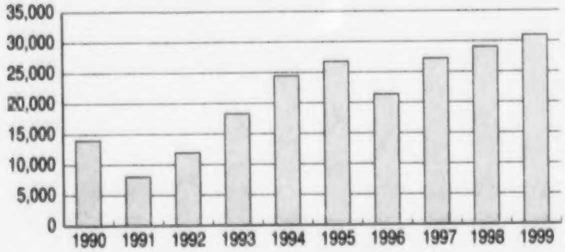
TABLE 12-8: REPLACEMENT OF CLASS 8 TRUCKS BY PROVINCE/TERRITORY, 1999

	Sales of Class 8	*Registered Class 8*	*Sales/ Registration (Per cent)*
NewFoundland	150	2,873	5.2
Prince Edward Island	45	2,515	1.8
Nova Scotia	632	6,838	9.2
New Brunswick	1,437	4,520	31.8
Quebec	6,782	32,770	20.7
Ontario	13,124	98,608	13.3
Manitoba	1,674	11,053	15.1
Saskatchewan	1,107	22,149	5.0
Alberta	3,814	61,907	6.2
British Columbia	2,219	17,286	12.8
Total	**30,984**	**260,519**	**11.9**

Sources: Provincial/Territorial Registration Files submitted to Statistics Canada for the Canadian Vehicle Survey; Canadian Vehicle Manufactures' Association

Figure 12-7 shows the annual sale of Class 8 trucks in Canada between 1990 and 1999.

FIGURE 12-7: ANNUAL SALES OF CLASS 8 TRUCKS IN CANADA, 1990 - 1999



Source: Canadian Vehicle Manufacturers' Association

MARITIME TRANSPORTATION

Canada's maritime freight traffic has three components: domestic flows,[1] transborder trade with the US, and "other" international (deep-sea, or overseas) traffic.[2] Marine freight traffic totalled 327.9 million tonnes[3] in 1998, a 0.5 per cent decrease from 1997. Domestic flows, also called coasting trade, accounted for 48.3 million tonnes, 3.4 per cent more than the 46.7 million tonnes moved in 1997. Canadian-flag vessels carried 47.3 million tonnes, or 98 per cent, of this total, which means that in 1998, foreign ships handled only two per cent of Canada's domestic marine shipping activities.

Transborder traffic between Canada and the US totalled 100.1 million tonnes, a 6.2 per cent increase over 1997 volumes. Canadian-flag vessels were active in the transborder trade, carrying 56.4 million tonnes, or 56.3 per cent of the total traffic. Overseas traffic decreased by five per cent in 1998, to 179.5 million tonnes. Canadian-flag vessels carried only 0.2 per cent of this traffic. Lower shipments of bulk cargo to Asian ports resulting from the Asian financial crisis were only partially offset by an increase in cargo received from these ports.

From 1988 to 1998, total marine flows fluctuated from year to year but showed a slightly increasing trend overall. Domestic traffic flows declined from a peak of 70 million tonnes in 1988 to 48.3 million tonnes in 1998, a 31 per cent decline.[4] Transborder (Canada–US) traffic in 1998 exceeded the previous high recorded in 1997 by almost six per cent. Since 1988, transborder tonnage increased by 19 per cent. Overseas (other international) traffic grew eight per cent between 1988 and 1998. Overseas volumes were five per cent lower in 1998 than in 1997.

Figure 12-8 and Table 12-9 show Canada's marine traffic statistics, by sector, from 1986 to 1998.

Table 12-10 shows Canada's flag share of Canadian waterborne trade in 1998.

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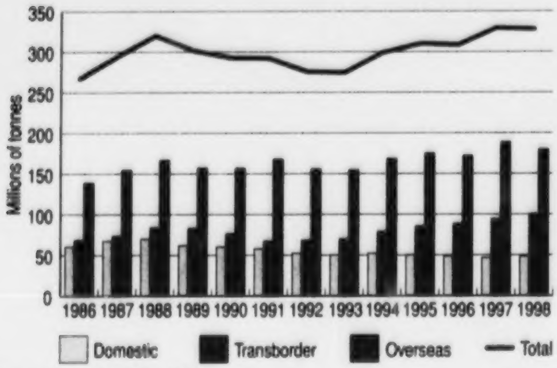
[1] Maritime traffic that originates from and is destined to a Canadian port; flows count traffic volume only once, in contrast to port loadings and unloadings, for which, in the case of domestic traffic, the same volumes get counted twice.

[2] Traffic to and from foreign countries other than the US.

[3] Based on traffic flows rather than tonnage handled at Canadian ports (domestic volumes are not double counted).

[4] Primarily reflecting a shift in grain traffic from Thunder Bay to West Coast ports.

FIGURE 12-8: CANADA'S MARINE TRAFFIC FLOWS BY SECTOR, 1986 – 1998



Source: Statistics Canada, Cat. 54-205

TABLE 12-9: CANADA'S MARINE TRAFFIC STATISTICS BY SECTOR, 1986 – 1998

(Millions of tonnes)

	Domestic Flows	*Transborder*	*Overseas*	*Total Flows*	*Total Handled*
1986	60.5	68.2	138.4	267.1	327.6
1987	67.6	73.2	153.8	294.6	362.2
1988	70.0	83.8	166.2	320.0	390.0
1989	62.0	82.7	156.7	301.4	363.4
1990	60.4	76.2	156.1	292.7	353.1
1991	57.9	67.0	167.2	292.1	350.0
1992	52.3	67.9	155.3	275.5	327.8
1993	50.4	69.9	154.2	274.5	324.9
1994	52.2	78.8	168.1	299.1	351.3
1995	50.4	85.2	174.5	310.1	360.5
1996	48.8	88.5	171.4	308.7	357.5
1997	46.7	94.3	188.4	329.4	376.1
1998	48.3	100.1	179.5	327.9	376.2

Source: Statistics Canada, Cat. 54-205

TABLE 12-10: CANADIAN FLAG SHARE OF CANADIAN WATERBORNE TRADE, 1998

(Millions of tonnes)

Canadian Waterborne Trade	*Canadian Flag*	*Per cent*	*US Flag*	*Per cent*	*Foreign Flag*	*Per cent*	*Total Traffic*
Domestic	47.3	98.0	0.1	0.2	0.9	1.8	48.3
Canada / US	56.4	56.3	7.9	7.9	35.8	35.8	100.1
Deep-Sea	0.4	0.2	0.5	0.3	178.6	99.5	179.5
Total	**104.1**	**31.7**	**8.5**	**2.6**	**215.3**	**65.7**	**327.9**

Source: Statistics Canada and Transport Canada

COASTING TRADE ACT

The *Coasting Trade Act* of 1992 restricts to Canadian-registered duty-free ships the transportation of cargo and passengers, as well as all commercial marine-related activities in Canadian waters. The Act also extends this reservation to Canada's continental shelf for activities related to the exploration and exploitation of non-living natural resources. It allows temporary licences to be issued to foreign-registered vessels in domestic operations, when no Canadian ship is available or capable of providing a particular service.

Canada Customs and Revenue Agency's regional custom's offices are responsible for the administration and collection of duties associated with obtaining a coasting trade licence. Paid monthly, these duties are 1/120th of 25 per cent of the declared fair market value of the foreign ship while involved in a coasting trade activity. The only exception to this rule (which came into effect in January 1998 as a result of the Canada–US Free Trade Agreement) is that no duty is payable on US-registered ships.

The Canadian Transportation Agency determines whether or not a Canadian-registered, duty paid ship is available to perform a particular service, while the Minister of Transport remains responsible for enforcing the Act.

DOMESTIC FREIGHT TRAFFIC

Domestic cargo is loaded and unloaded at Canadian ports and therefore handled twice by the port system. Domestic cargo rebounded from last year's record low, rising 3.4 per cent to 96.6 million tonnes. Increased shipments of iron ore, crude petroleum and fuel oil offset a significant decline in wheat shipments. Domestic marine cargo has been steadily decreasing since its peak in 1988, when ports handled 139.9 million tonnes. This decline is due partly to a change in the direction of Canada's international trade. In the 1980s, many commodities, such as grain, were carried as domestic cargo via the Great Lakes–St. Lawrence Seaway system and then transferred at Canada's eastern ports for shipment overseas. These commodities are increasingly being carried by rail to Canada's western ports for shipment overseas.

Preliminary data for domestic tonnage handled over the first two quarters of 1999 indicate an eight per cent increase over the same period in 1998, from 18.4 million tonnes to 19.9 million tonnes.

Table 12-11 shows flows of domestic marine traffic by region in 1998.

TABLE 12-11: MARINE DOMESTIC FLOWS BY CANADIAN REGION, 1998

(Thousands of tonnes)

Region of Origin (Loadings)	----- *Region of Destination (Unloadings)* -----				
	Atlantic	*St. Lawrence*	*Great Lakes*	*Pacific*	*All Regions*
Atlantic	4,410	2,862	332	30	7,654
St. Lawrence	1,046	6,308	6,542	0	13,896
Great Lakes	229	5,538	8,657	0	14,424
Pacific	3	0	0	12,314	12,317
All Regions	**5,688**	**14,728**	**15,531**	**12,344**	**48,291**

Source: Statistics Canada, Cat. 54-205

The bulk of domestic traffic is concentrated in the Great Lakes–St. Lawrence Seaway system. These ports handled 58.6 million tonnes (loadings and unloadings) in 1998, or 60.7 per cent of the total domestic tonnage. The Pacific region ranked second, handling 24.7 million tonnes, or 25.5 per cent of the total. All domestic cargo handled by Pacific ports stayed within that region. In 1998, Pacific coast ports handled 0.6 million tonnes more cargo than in 1997. Ports in the Atlantic region handled 13.3 million tonnes of domestic cargo in 1998, 21 per cent more than in 1997. Crude petroleum shipments drove the increase, with the first full year of production of the oil field on the Grand Banks.

Increasing volumes of petroleum products (26.5 per cent) and iron ore (22.2 per cent) were the significant contributors to the increase in domestic traffic within Canada. The decline in grain shipments, however, resulted in a 32 per cent drop in cargo, down to 5.2 million tonnes in 1998.

Across Canada, the primary commodities handled in the domestic trade in 1998 were:

- iron ore and concentrates (14.0 million tonnes, up 22.2 per cent from 1997)
- pulpwood and chips (12.4 million tonnes, up 4.3 per cent)
- fuel oil (9.7 million tonnes, up 9.5 per cent)
- stone and limestone (9.3 million tonnes, up 2.7 per cent)
- wheat (9.0 million tonnes, down 36.6 per cent).

These five commodities accounted for 56.3 per cent of all domestic tonnage handled at Canadian ports in 1998.

In 1998, just over two per cent of Canada's domestic marine traffic was handled by foreign-flag ships, down from 2.6 per cent in 1997. Historically, foreign-flag vessels have accounted for less than two per cent of the total domestic traffic. During 1999, Revenue Canada received 117 applications for coasting trade licences, up from 99 in 1998. Of these, 108 have been granted. The greatest proportion of licences was granted to US-flag ships, while the Panamanian-flag ships were second.

A significant number of coasting trade applications in 1999 were again related to Canada's offshore oil and gas activity: the movement of products from the Hibernia and Cahasset oil development fields, as well as activities associated with the exploration and development of the Sable Island gas fields. In 1999, 17 licences were granted for seismic research ships, operating mainly on the east coast.

Table 12-12 shows both the percentage and actual total cargo tonnage carried by foreign-registered ships involved in Canadian domestic shipping between 1988 and 1998.

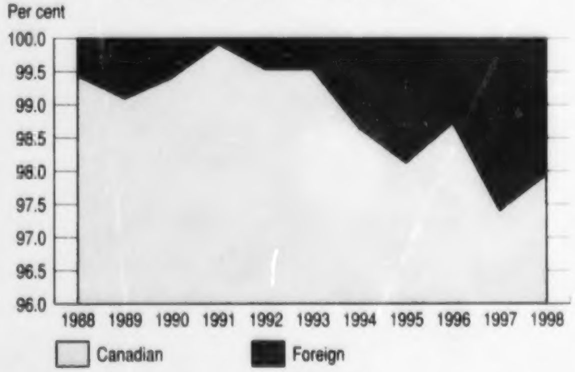
TABLE 12-12: SHARE OF TONNAGE CARRIED BY FOREIGN FLAG SHIPS IN THE CANADIAN COASTING TRADE, 1988 – 1998

Year	*Canadian*	*Per cent*	*Foreign*	*Per cent*	*Total*
1988	69,584,300	99.44	389,200	0.56	69,973,500
1989	61,455,700	99.10	560,100	0.90	62,015,800
1990	60,005,700	99.41	354,300	0.59	60,360,000
1991	57,862,300	99.92	48,400	0.08	57,910,700
1992	52,021,600	99.54	240,200	0.46	52,261,800
1993	49,744,300	99.54	231,300	0.46	49,975,600
1994	51,474,100	98.65	703,800	1.35	52,177,900
1995	49,552,400	98.13	945,400	1.87	50,497,800
1996	48,377,762	98.73	623,384	1.27	49,001,146
1997	45,431,820	97.41	1,208,017	2.59	46,639,837
1998	47,301,104	97.93	998,994	2.07	48,300,098

Source: Transport Canada, from data supplied by Statistics Canada

Figure 12-9 indicates the percentage of total cargo carried by foreign-flag ships involved in Canadian domestic shipping from 1988 to 1998.

FIGURE 12-9: SHARE OF TONNAGE CARRIED BY FOREIGN-FLAG SHIPS IN CANADIAN COASTING TRADE, 1988 – 1998



Source: Transport Canada from data supplied by Statistics Canada

INTERNATIONAL FREIGHT TRAFFIC

The 279.6 million tonnes of international cargo volume handled in 1998 was 1.1 per cent less than the record quantity handled during 1997. Of all the international tonnage handled at Canadian ports, 64.1 per cent is export-oriented (including in-transit and re-export traffic). Canada's main deep-sea trading partners — Japan, China, South Korea, the United Kingdom and other western European nations — together accounted for over 60 per cent of total Canadian international marine traffic (exports and imports) in 1998.

According to international trade data, the value of Canadian international marine trade in 1998 was in the order of $79.7 billion (excluding shipments via US ports), 5.2 per cent less than in 1997. Marine exports were valued at $40.9 billion and imports at $38.8 billion. The value of exports decreased by 10.9 per cent, notably with reduced cargoes bound for Asia and Oceania, the Middle East, and South America, while the value of imports increased by two per cent.

Table 12-13 shows the value of the marine share of Canada's international trade in 1998.

TABLE 12-13: VALUE OF MARINE SHARE OF CANADIAN INTERNATIONAL TRADE, 1998

(Billions of dollars)

	Marine	*All Modes*	*Marine (Per cent)*
Transborder			
Exports[1]	6.2	269.9	2.3
Imports	3.1	203.6	1.5
Total US	9.4	473.5	2.0
Other Countries			
Exports[1]	34.7	48.6	71.4
Imports	35.6	95.0	37.5
Total other	70.3	143.6	49.0

1 Including domestic exports and re-exports.

Source: Statistics Canada, Cat. 65-202 and 65-203; special tabulations

For more detailed information on Canada's trade, see Chapter 8, *Transportation and Trade*.

Conference/Non-conference Market Shares

Shipping lines offering scheduled liner services can operate either as a member line of a shipping conference or as an independent (non-conference) line. Non-conference traffic has grown consistently in recent years, both in absolute terms and as a percentage of total liner traffic. Conference traffic was relatively static between 1994 and 1997, but was down somewhat in 1998. The Asia North America Eastbound Rate Agreement (ANERA) dissolved late in 1996. Several other conferences have been dissolved during 1999, including the Canada Westbound Rate Agreement. The decline in conference power on many routes has resulted in a substantial increase in market share for independent lines, particularly in 1998. If non-conference US origin/destination transshipped traffic were taken into account, the non-conference share would be even more dominant.[5]

Table 12-14 compares the conference and non-conference shares of the Canadian liner trade between 1994 and 1998.

TABLE 12-14: CONFERENCE/NON-CONFERENCE SHARES OF CANADIAN LINER TRADE, 1994 – 1998

(Millions of tonnes)

	1994	1995	1996	1997	1998
Conference[1]					
Exports	5.6	5.6	5.9	5.9	5.4
Imports	5.0	4.4	4.7	4.3	4.3
Total	10.6	10.0	10.6	10.2	9.7
Non-conference					
Exports	5.3	6.5	6.8	6.5	8.2
Imports	3.6	3.6	3.7	5.3	6.6
Total	8.9	10.0	10.5	11.8	14.8

Source: Statistics Canada, International Database; Transport Canada.

The breakdown of liner traffic by foreign region of origin/destination is also helpful to illustrate the relative shares of conference and non-conference operators on different routes. Table 12-15 compares conference and non-conference liner traffic by region for 1998.

TABLE 12-15: LINER TRAFFIC BY REGION, 1998

(Millions of tonnes)

	Liner Imports		*Liner Exports*		
Region	*Conference*	*Non-conference*	*Conference*	*Non-conference*	*Total*
Europe	4.1	2.5	3.9	1.6	12.1
Asia	0.2	2.5	1.5	4.4	8.6
Central America	–	0.4	–	0.6	1.0
South America	–	0.5	–	0.4	0.9
North America	–	0.2	–	0.4	0.6
Middle East	–	0.1	–	0.4	0.5
Oceania	–	0.2	–	0.2	0.4
Africa	–	0.2	–	0.2	0.4
Total	**4.3**	**6.6**	**5.4**	**8.2**	**24.5**

Note: – means "Nil"

Source: Statistics Canada, International Database; and Transport Canada.

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[5] It is important to note that the data in Tables 12-15 and 12-16 are not adjusted for US transshipments moving through Canadian ports. Much of this traffic moves on conference vessels but at non-conference rates. The route that is likely most affected is between Europe and Canada. The Port of Montreal estimates that approximately 50 per cent of its liner traffic originates in, or is destined for, the US. This would, of course, affect the balance between conference/non-conference traffic further in favour of independent operators.

Marine Traffic by Commodity

According to a recent Organization for Economic Co-operation and Development (OECD) document,[6] total seaborne trade in the main bulk commodities (coal, iron ore, grain, bauxite, alumina and phosphate) increased continuously during the last decade and reached a peak of 1.2 billion tonnes in 1997, up by 33 per cent over the 1987 total. Nevertheless, over the same period, dry bulk carrier freight rates exhibited volatility and rates in many trade lanes were lower at the end of the period. For 1998, a United Nations report[7] indicates that the dry bulk market freight rates were at significantly lower rates than the year before. This is mainly attributed to the Asian financial crisis.

As in past years, in terms of the type of cargo carried, conference operators tend to concentrate almost exclusively on containerized traffic, with 9.5 million tonnes out of the total 9.7 million tonnes they carried moving in containers. Non-conference traffic is also characterized by a large percentage of cargo in containers (69 per cent), but includes significant amounts of general cargo and neo-bulk traffic as well.

CANADA–US TRANSBORDER FREIGHT TRAFFIC

Canada's marine traffic with the US increased by 19 per cent between 1988 and 1998, fuelled by both exports and imports. In 1998, transborder traffic reached a peak of 100.1 million tonnes, up 6.2 per cent from 1997. In 1998, exports (loadings to US destinations)[8] led the slight growth (3.5 per cent) in marine traffic between the two nations. Also in 1998, imports (unloadings) were the most dynamic, increasing 10.2 percent to 41.2 million tonnes, compared with 37.4 million tonnes recorded over the same period in 1997.

Preliminary data for the first two quarters of 1999 indicate that this upward trend continued. Transborder tonnage of 42.3 million tonnes was slightly higher (1.3 per cent) than the 41.8 million tonnes shipped over the same period in 1998.

Table 12-16 shows Canada's maritime trade with the US from 1986 to 1998. Figure 12-10 shows Canada's Maritime traffic with the US from 1986 to 1998.

Marine traffic with the US was valued at $9.4 billion in 1998, driven by exports of $6.2 billion. This value, however, represented only two per cent of total Canada–US trade. The bulk of the traffic was handled by surface transport modes, such as trucking and rail. For further details on the value of Canada's traffic with the US, see Chapter 8, *Transportation and Trade*.

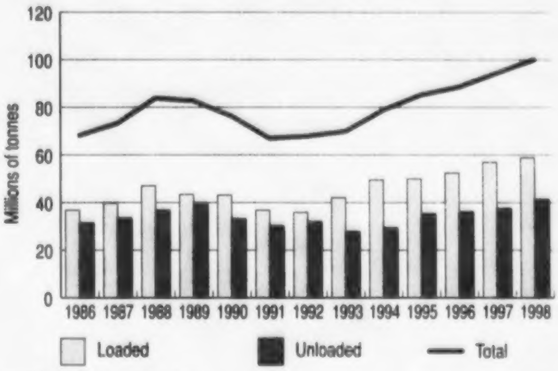
TABLE 12-16: CANADA'S MARITIME TRADE WITH THE US, 1986 - 1998

(Millions of tonnes)

	Loaded	*Unloaded*	*Total*
1986	36.8	31.4	68.2
1987	39.8	33.5	73.3
1988	47.0	36.8	83.8
1989	43.4	39.3	82.7
1990	43.1	33.2	76.3
1991	36.8	30.2	67.0
1992	35.9	32.0	67.9
1993	42.1	27.8	69.9
1994	49.5	29.3	78.8
1995	49.9	35.3	85.2
1996	52.4	36.1	88.5
1997	56.9	37.4	94.3
1998	58.9	41.2	100.1

Source: Statistics Canada, Cat. 54-205

FIGURE 12-10: CANADA'S MARITIME TRAFFIC WITH THE US, 1986 - 1998



Source: Statistics Canada, Cat. 54-205

Exports

In 1998, loadings at Canadian ports destined to the US amounted to 59 million tonnes, up 3.5 per cent from 1997. Seven commodities accounted for 80 per cent of marine export volumes. They were (in million tonnes) iron ore (9.8), crude petroleum (8.6), gypsum (6.2), stone and limestone (6.0), fuel oil (5.5), salt (4.2) and gasoline (3.9).

The amounts of major commodities exported to the US in 1998 differed significantly from those exported in 1997. Volumes of salt exports jumped by 19 per cent, while crude petroleum and stone and limestone increased by

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[6] *Discussion Document on Regulatory Reform in International Maritime Transport*, Maritime Transport Committee of the OECD, May 1999.

[7] *Review of Maritime Transport 1999*, United Nations Conference on Trade and Development, 1999.

[8] Including in-transit and transshipment cargo.

6.7 and 15.6 per cent, respectively. Gypsum shipments were stable, while exports of iron ore and gasoline decreased by 8.8 and 2.7 per cent, respectively.

There were two main flow corridors in 1998: from the Canadian Atlantic to the US Atlantic, with 24.6 million tonnes (42 per cent of total loadings to the US), and from the Canadian Great Lakes to US Great Lakes ports, with 13.3 million tonnes (23 per cent of total loadings).

Table 12-17 details traffic flows from Canada to the US in 1998.

TABLE 12-17: CANADA'S MARINE TRAFFIC TO THE US, 1998

(Millions of tonnes)

Canadian Region of Origin	*US Region of Destination* *US Atlantic*	*US Great Lakes*	*US Pacific*	*Total*
Atlantic	24.6	0.0	0.2	24.7
St. Lawrence	5.6	6.8	0.1	12.4
Great Lakes	0.0	13.3	–	13.4
Pacific	0.8	0.1	7.5	8.4
Total	**31.0**	**20.2**	**7.7**	**58.9**

Source: Statistics Canada, Cat. 54-205; Transport Canada

Imports

Unloadings at Canadian ports of shipments originating in the US rose from 37.4 million tonnes in 1997 to 41.2 million tonnes in 1998, a ten per cent increase. Significant commodities, in terms of volume, included (in million tonnes) coal (17.7), iron ore (6.4), stone and limestone (3.0), fuel oil (2.4), other petroleum products (1.4) and alumina and bauxite (1.2). Together, these six commodities accounted for 78 per cent of all marine imports from the US.

As with exports, there was considerable instability in the volumes of marine imports from the US compared with 1997 volumes. Imports of coal and alumina and bauxite were up 29.4 and 14.1 per cent, respectively. Other petroleum products showed a 9.0 per cent drop. Volumes of stone and limestone and iron ore decreased by 5.2 and 1.3 per cent, respectively.

The bulk of marine imports from the United States, 76.2 per cent of the total volume, originated at ports on the Great Lakes. Ports along the US Atlantic and Gulf accounted for 15.5 per cent, with US Pacific ports making up the remainder of 8.3 per cent.

Table 12-18 shows the traffic flow from the US to Canadian ports in 1998.

TABLE 12-18: CANADA'S MARINE TRAFFIC FROM THE US, 1998

(Millions of tonnes)

Canadian Region of Destination	*US Region of Origin* *US Atlantic*	*US Great Lakes*	*US Pacific*	*Total*
Atlantic	2.5	0.0	0.1	2.6
St. Lawrence	3.4	3.5	0.3	7.1
Great Lakes	0.2	28.0	0.0	28.2
Pacific	0.3	0.0	2.9	3.2
Total	**6.4**	**31.4**	**3.4**	**41.2**

Source: Statistics Canada, Cat. 54-205; Transport Canada

OVERSEAS FREIGHT TRAFFIC

In 1998, Canadian maritime trade with overseas countries (excluding the US) totalled 179.5 million tonnes, down 4.7 per cent from the 1997 volume of 188.4 million tonnes. This trade has been strongly export-oriented, with the loading share oscillating between 67 and 79 per cent over the last ten years. About 62 per cent of total loadings to overseas countries took place at west coast ports. In contrast, 89 per cent of overseas imports were unloaded at Canada's east coast ports.

Table 12-19 shows Canada's maritime overseas trade from 1986 to 1998.

TABLE 12-19: CANADA'S MARITIME OVERSEAS TRADE, 1986 – 1998

(Millions of tonnes)

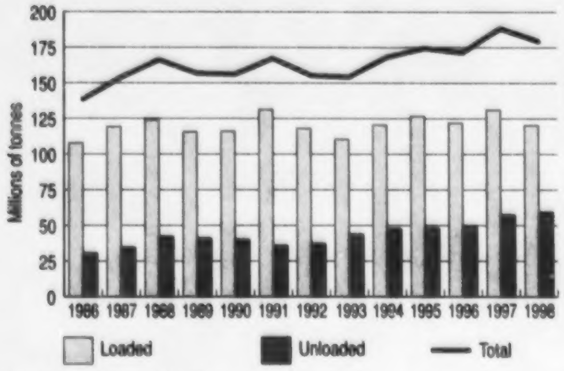
	Loaded	*Unloaded*	*Total*
1986	107.8	30.6	138.4
1987	119.2	34.6	153.8
1988	124.1	42.1	166.2
1989	115.7	41.0	156.7
1990	116.0	40.1	156.1
1991	131.3	35.9	167.2
1992	118.0	37.3	155.3
1993	110.4	43.8	154.2
1994	120.5	47.6	168.1
1995	126.6	47.9	174.5
1996	121.9	49.5	171.4
1997	131.1	57.3	188.4
1998	120.2	59.3	179.5

Source: Statistics Canada, Cat. 54-205; Transport Canada

Figure 12-11 shows Canada's maritime overseas trade from 1986 to 1998.

Preliminary data for the first two quarters of 1999 indicate 4.6 per cent less tonnage handled in the Canada-overseas maritime trades than in the same period of 1998. Loadings show a 7.8 per cent decline in volumes, largely due to the economic crisis that unfolded in many Pacific Rim and other Asian countries. This crisis resulted in depressed demand in Asia for Canadian bulk commodities such as grain, coal, iron ore and potash.

FIGURE 12-11: CANADA'S MARITIME OVERSEAS TRADE, 1986 – 1998



Source: Statistics Canada, Cat. 54-205; Transport Canada

Data indicate a two per cent increase in unloadings over 1998 volumes.

In 1998, Canadian marine trade with overseas countries (excluding the US) was valued at $70.3 billion, with exports estimated at $34.7 billion and imports at $35.6 billion. In terms of value, marine transport accounted for 49 per cent of all overseas trade and was the dominant mode for shipping overseas freight.

For more detailed information on Canada's offshore trade, see Chapter 8, *Transportation and Trade*.

Exports

In 1998, Canadian marine loadings destined for countries other than the US generated 120.2 million tonnes of traffic, down more than eight per cent from 1997 levels. The major commodities shipped from Canada were (in million tonnes) coal (32.7), iron ore (21.0), wheat (14.1), containerized freight (11.4), woodpulp (5.7), sulphur (5.2) and potash (4.3). Nine per cent of outbound loadings were containerized.

Most of the major commodities loaded in 1998 declined significantly from 1997 levels. Wheat and potash were both down by more than 20 per cent. Coal, iron ore and sulphur shipments were down by 8.4, 5.1, and 5.8 per cent, respectively. Only containerized freight volumes showed an increase, of 7.3 per cent.

In 1998, over 61 per cent of Canadian loadings for overseas destinations came from western Canadian ports, while ports along the Great Lakes–St. Lawrence Seaway system handled most of the eastern share. Predictably, the direction of trade was highly polarized, with the western ports dominating the Asia and Oceania trade routes, while the eastern ports handled a high proportion of tonnage shipped to Europe.

Table 12-20 shows Canada's maritime traffic to overseas in 1998.

TABLE 12-20: CANADA'S MARINE TRAFFIC TO OVERSEAS, 1998

(Millions of tonnes)

	Canadian Region of Origin		
Foreign Region of Destination	*Eastern ports*	*Western ports*	*Total*
Asia and Oceania	6.4	51.7	58.1
Europe	30.8	9.0	39.8
South and Central America	5.2	8.2	13.5
Middle East and Africa	3.7	5.0	8.7
Total	**46.2**	**74.0**	**120.2**

Note: Table may not add up due to rounding.

Source: Statistics Canada, Cat. 54-205, Transport Canada

Imports

In 1998, marine shipments from overseas points unloaded at Canadian ports reached 59.3 million tonnes, a 3.5 per cent increase over the 57.3 million tonnes recorded in 1997. At 27.4 million tonnes (46 per cent of all tonnage unloaded from offshore origins), crude petroleum[9] dominated imports. Other major commodities unloaded included (in million tonnes) alumina and bauxite (5.4), containerized freight (8.2), iron and steel (4.3), fuel oil (2.7), iron ore (1.3) and gasoline (1.3). Well over 13 per cent of the inbound traffic was containerized.

Over 89 per cent of inbound overseas shipments was unloaded at eastern Canadian ports. The principal origins of overseas cargo were Europe, the Middle East and Africa.

Table 12-21 shows Canada's maritime traffic from overseas markets in 1998.

TABLE 12-21: CANADA'S MARINE TRAFFIC FROM OVERSEAS, 1998

(Millions of tonnes)

	Canadian Region of Destination		
Foreign Region of Origin	*Eastern ports*	*Western ports*	*Total*
Europe	25.5	0.2	25.7
Middle East and Africa	11.5	1.2	12.7
South and Central America	12.1	1.0	13.1
Asia and Oceania	3.8	3.9	7.8
Total	**52.9**	**6.4**	**59.3**

Note: Table may not add up due to rounding.

Source: Statistics Canada, Cat. 54-205; Transport Canada

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[9] Including transshipment of North Sea crude petroleum.

AIR TRANSPORTATION INDUSTRY

AIR CARGO

Domestic air cargo transportation is provided within a deregulated environment that does not restrict routing, capacity or pricing. Cargo is carried in the belly-hold of passenger aircraft, on passenger/cargo combination aircraft and in dedicated cargo aircraft. Scheduled and non-scheduled (charter) transborder and international air cargo service is provided within a framework of bilateral air agreements, international agreements and national policies. It is the prerogative of the Minister of Transport to designate the Canadian carriers that will exercise the international all-cargo rights for scheduled services, which have been acquired by Canada through bilateral negotiations.

Cargo revenues represent a small proportion of the total revenues of Canada's two major carriers. For Air Canada and Canadian Airlines, cargo revenues accounted for only 7.7 per cent of their combined 1998 total unconsolidated revenues of $7.6 billion. Most of the cargo revenue for the major carriers is earned on cargo carried on passenger flights. Air Canada operates four passenger/cargo combination aircraft across the Atlantic. Cargo revenues are of less importance to the regional carriers that fly smaller aircraft because they have less cargo capacity. There is a large group of smaller carriers, most of which fly small cargo aircraft, that provide cargo services on a charter basis throughout the country. These carriers play a particularly important role in transporting cargo in the North.

Although specific information on Canada is not available, forecasts for the global air cargo market predict continued growth for the industry. Airframe manufacturers predict that air freight traffic will grow at an annual average rate of six percent over the next 20 years. The role of international express services is also expected to increase during the same period.

DOMESTIC SERVICES

The domestic air cargo industry includes passenger air carriers that carry cargo in their aircraft belly-hold for incremental revenue; all-cargo carriers; and freight forwarders and consolidators of shipments.

Table 12-22 shows the volume of goods carried by Canadian air carriers, by sector, from 1993 to 1998. There was very little change in the total tonnes of cargo carried between 1997 and 1998. Domestic tonnes carried dropped by five per cent to 487,583 tonnes, and accounted for 60 per cent of the total tonnes carried in 1998. During the same period, transborder tonnes carried increased by 22 per cent, while international tonnes carried rose by five per cent.

TABLE 12-22: GOODS CARRIED BY CANADIAN AIR CARRIERS BY SECTOR, 1993 – 1998

(Tonnes)

Year	*Domestic*	*Transborder*	*Other International*	*Total*
1998[1]	487,583	94,176	233,952	815,711
1997	513,719	77,387	222,452	813,558
1996	447,313	80,389	195,584	723,286
1995	416,171	87,663	183,743	687,577
1994	443,601	70,882	169,102	683,585
1993	422,147	68,238	163,108	653,493

Note: For 1995 to 1997, Level I-III carriers; for 1993 and 1994, Level I-IV carriers.

1 Preliminary data for 1998.

Source: Statistics Canada, Cat. 51-206

Table 12-23 shows the operating revenues generated by goods carried on Canadian air carrier services, by sector, from 1993 to 1998. Total cargo operating revenues increased by eight per cent between 1997 and 1998. Domestic revenues accounted for 67 per cent of total cargo operating revenues in 1998. Domestic revenues increased by eight per cent between 1997 and 1998, reaching $768 million, while international revenues increased by seven per cent.

TABLE 12-23: OPERATING GOODS REVENUES OF CANADIAN AIR CARRIERS BY SECTOR, 1993 – 1998

(Millions of dollars)

Year	*Domestic*	*International*[1]	*Total*
1993	588.8	224.9	813.7
1994	562.7	296.4	859.1
1995	694.2	292.3	986.5
1996	655.3	350.5	1,005.7
1997	709.0	357.3	1,066.3
1998	768.6	383.7	1,152.3

1 Includes transborder and other international.

Source: Statistics Canada, Cat. 51-206

Air cargo carriers provide a vital transportation service in the North, where alternative transportation is often not available. Large aircraft operators, such as First Air and Canadian North, provide services that link northern communities to each other and to major centres in southern Canada. In addition, numerous small cargo carriers provide service in Canada's northern regions. Preliminary data for cargo activity in the North indicate that major carriers carried four per cent more domestic cargo in 1998 than in 1997. There is no data available on activity by regional and local cargo carriers, as they are not required to file cargo carriage data.

CANADA–U.S. TRANSBORDER SERVICES

In 1998, air transport between Canada and the US amounted to $32.7 billion, or close to seven per cent of the total $473.5 billion transborder trade (see Table 12-24). Of this, $18.7 billion were imports and $14 billion were exports. The top import commodities were telecommunications equipment ($3.8 billion), electronic equipment ($3.3 billion), aircraft equipment ($3.0 billion), machinery/equipment ($2.7 billion) and medical supplies ($1.2 billion). The top export commodities were aircraft equipment ($4.3 billion), office machine equipment ($2.7 billion), telecommunications equipment ($2.2 billion) and other equipment/tools ($1.2 billion). It should be noted that a significant portion of cargo moving on air waybills is actually trucked between Canada and the US, but is recorded in trade data as air traffic.

TABLE 12-24: VALUE OF CANADIAN INTERNATIONAL TRADE'S AIR SHARE, 1993 – 1998

(Billions of dollars)

	Air	*All modes*	*Air (per cent)*
Transborder			
Exports[1]	14.0	269.9	5.2
Imports	18.7	203.6	9.2
Total US	32.7	473.5	6.9
Other Countries			
Exports[1]	9.4	48.6	19.4
Imports	20.7	95.0	21.8
Total other	30.2	143.6	21.0

1 Includes domestic exports and re-exports.

Source: Statistics Canada, Cat. 65-202 and 65-203; special tabulations for exports

Many Canadian all-cargo operators provide transborder cargo services under contract to the major courier companies. Table 11-15 in the previous chapter shows the participation of Canadian air carriers in transborder courier operations.

OTHER INTERNATIONAL SERVICES

In 1998, air transport between Canada and countries other than the US amounted to $30.2 billion, or 21 per cent of Canada's $143.6 billion in this trade category. Of the total carried by air, $20.7 billion was accounted for by imports and $9.4 billion was accounted for by exports. Ontario and Quebec dominated air transport trade with other countries, with 43 per cent and 25 per cent, respectively.

Table 12-25 shows that the main non-US destinations for Canada's exports by air were Western European countries, with $5.2 billion in exports, and Pacific Rim countries, with $2.4 billion. Imports by air from non-US countries also originated mainly in Western Europe, with $10.1 billion, and the Pacific Rim, with $7.6 billion. Table 12-25 also shows the value of Canadian exports by air, by main destination, for 1998. Table 12-26 shows the value of Canadian imports by air, by main countries of origin, for 1998.

TABLE 12-25: VALUE OF CANADIAN EXPORTS BY AIR AND MAIN DESTINATIONS, 1998

Destinations	*Value (millions of dollars)*	*Air (Per cent)*
Western Europe	**5,175**	**54.8**
UK	1,571	
Germany	834	
France	740	
Switzerland	659	
Other	1,371	
Pacific Rim	**2,386**	**25.2**
Hong Kong	544	
Japan	483	
People's Republic of China	292	
Australia	235	
Other	831	
Other Countries	**1,888**	**20.0**
Total Canadian Exports by Air	**9,449**	**100.0**

Note: Excluding the US; including domestic exports and re-exports.

Source: Statistics Canada, Cat. 65-202 and Special Tabulations

TABLE 12-26: VALUE OF CANADIAN IMPORTS BY AIR, MAIN COUNTRIES OF ORIGIN, 1998

Origins	*Value (millions of dollars)*	*Air (per cent)*
Western Europe	**10,131**	**48.9**
France	2,376	
UK	2,297	
Germany	1,492	
Italy	864	
Ireland	681	
Other	2,421	
Pacific Rim	**7,555**	**36.4**
Japan	2,160	
Taiwan	1,168	
Malaysia	914	
South Korea	807	
People's Republic of China	646	
Other	1,860	
Other Countries	**3,047**	**14.7**
Total Canadian Imports by Air	**20,733**	**100.0**

Note: Excluding the US.

Source: Statistics Canada, Cat. 65-203

Five major international cargo carriers provided regularly scheduled all-cargo air service to and from Canada during 1999: Cathay Pacific (Vancouver), Korean Air (Toronto), Air France (Montreal), Lufthansa Cargo (Montreal) and Iberia (Montreal). In addition to these, there were carriers operating non-scheduled, or charter, cargo flights from international points to Canada.

PASSENGER TRANSPORTATION 13

The Canadian Vehicle Survey undertaken in 1999 will provide much-needed data about transportation in Canada, such as information on automobile use, the purpose and length of each trip, start and finish times, driver demographics, vehicle type, and number of occupants.

Canadians travel billions of kilometres every year by air, rail, ship, and road vehicles, including passenger vehicles and scheduled urban, scheduled intercity and charter buses. This chapter focuses on the level of passenger activities of each modal transport service. For public passenger services, this overview provides a sense of the relative use made of the different modes of travel and reflects recent trends.

Although the most common means of travel in Canada is the automobile, little hard data has been available until now to track the automobile travel patterns of Canadians. The information presented in this chapter is based mainly on provincial and territorial registration data and does not focus on travel patterns or attempt to analyse vehicle usage. The Canadian Vehicle Survey undertaken in the past year is designed to fill in many gaps in data in this important area.

RAIL TRANSPORTATION

Passenger traffic declined in 1998, to about 4.0 million passengers from 4.1 million in the previous year. Passenger-kilometres followed the same trend, dropping to 1.46 billion from 1.51 billion in 1997.

As Table 13-1 shows, VIA Rail carried the large majority of passenger traffic in 1998, with 3.65 million passengers and about 1.38 billion passenger-kilometres. The Quebec–Windsor corridor continued to account for about 85 per cent of passengers for the Class I carrier. VIA's eastern services carried slightly more of the remaining traffic than did its western services.

Algoma Central Railway, BC Rail, Ontario Northland, and the Quebec, North Shore and Labrador Railway are the four Class II carriers reporting intercity passenger statistics. In aggregate, according to reported statistics, these railways carried 334,280 passengers and registered about 80.2 million passenger-kilometres.

TABLE 13-1: PASSENGER AND PASSENGER-KILOMETRES FOR VIA RAIL AND CLASS II RAIL CARRIERS, 1994 – 1998

Year	*VIA Rail*	*Class II*	*Total*
Passengers			
1998	3,646,000	334,280	3,980,280
1997	3,764,983	339,196	4,104,179
1996	3,666,000	323,405	3,989,405
1995	3,597,000	414,315	4,011,315
1994	3,586,000	441,622	4,027,622
Passenger-kilometres			
1998	1,377,598,464	80,233,805	1,457,832,269
1997	1,423,479,252	91,113,448	1,514,592,700
1996	1,436,197,898	77,137,263	1,513,335,161
1995	1,382,568,118	84,417,430	1,466,985,548
1994	1,342,421,423	84,959,534	1,427,380,957

Source: Statistics Canada, Cat. 52-216; Transport Canada

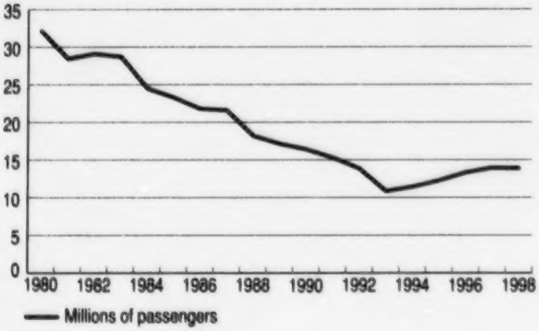
BUS TRANSPORTATION

SCHEDULED INTERCITY BUS SERVICES

In 1998, approximately 13.9 million passengers travelled approximately 134 million kilometres on motor coaches, school buses and other vehicles used in scheduled intercity bus service operations, according to Statistics Canada. Scheduled intercity operators carried 44 per cent of those passengers i.e. 6.1 million passengers travelling 46 million kilometres. They achieved this level of activity with 100 main terminals and an additional 1,600 agencies (local businesses that sell bus tickets).

Figure 13-1 depicts the total number of passengers using scheduled intercity services provided by all industry segments (intercity carriers, charter carriers, and school bus operators) from 1980 to 1998. Ridership was in fairly steady decline from the late 1970s until it hit a low of 10.8 million in 1993. In recent years, the number of riders has stabilized at between 13.5 and 14 million annually.

FIGURE 13-1: INTERCITY SCHEDULED BUS PASSENGERS, 1980 – 1998



Source: Statistics Canada, Cat. 53-215

Besides offering intercity passenger service, scheduled intercity operators realize a significant portion of their revenues from charter bus services, school bus and other passenger bus service, and bus parcel express service. These services account for an additional 1.6 million passengers and over 17 million bus-kilometres.

In 1998, according to Statistics Canada, there were 31 operators with revenues exceeding $200,000 that reported total annual operating revenues of $133.1 million and operating expenses of $123.7 million. Approximately 62 per cent of the operating revenues of these operators came from scheduled intercity services, with charter and tour services contributing around 11 per cent, other passenger services nine per cent, and parcel express eight per cent.

TABLE 13-2: SCHEDULED INTERCITY BUS SERVICE CORRIDORS

Corridor	*Carrier*
Halifax–Moncton–Quebec	SMT/Acadian
Quebec City–Montreal	Orleans Express
Montreal–Toronto	Trentway-Wagar
Montreal–Ottawa	Voyageur Colonial[1]
Ottawa–Toronto	Greyhound[1]
Toronto–Hamilton–Niagara/Buffalo	Trentway; Greyhound[1]
Toronto–London–Windsor	Greyhound[1]
Toronto–Barrie	Greyhound[1]; Ontario Northland; Penetang Midland; GO
Toronto–North Bay	Ontario Northland
Toronto–Sudbury	Greyhound[1], Ontario Northland
Toronto–Winnipeg–Calgary–Vancouver	Greyhound[1]
Calgary–Edmonton	Greyhound[1]; Red Arrow (Pacific Western)

[1] Subsidiary of Laidlaw.

Source: Motor Coach Canada, August 1999

Table 13-2 identifies the main corridors in which scheduled intercity bus service is offered in Canada and names the operators providing the service. Laidlaw is the dominant carrier in the majority of intercity corridors in Ontario and western Canada.

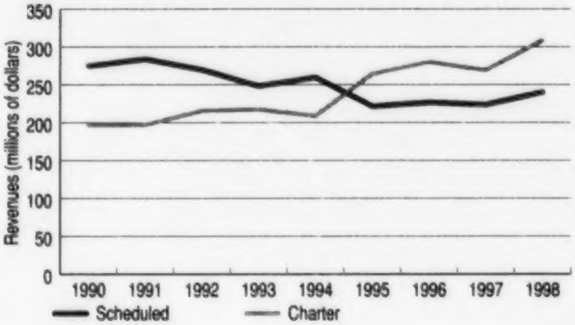
CHARTER BUS SERVICES

Charter bus activities are closely but not solely tied to tourism, an activity that has been growing in importance in all regions of the country.

Figure 13-2, based on Statistics Canada data, shows how revenues generated from scheduled intercity service and from charter service have changed since 1990. The data shows that between 1990 and 1994 charter revenues increased gradually and then afterward increased significantly. Scheduled intercity revenues gradually declined between 1990 and 1995, and then changed little between 1995 and 1998.

FIGURE 13-2: SCHEDULED INTERCITY AND CHARTER SERVICES REVENUE TRENDS, 1990 – 1998

(Based on service lines)



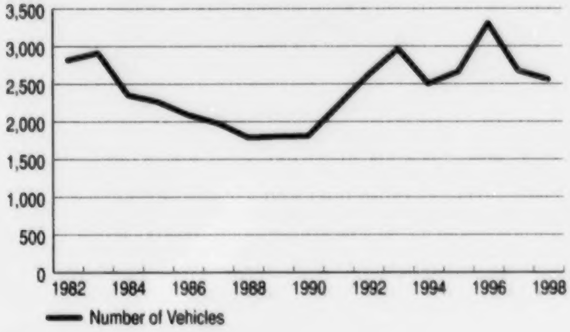
Source: Statistics Canada, Cat. 53-215

Statistics Canada data also shows that the increase in charter bus operation revenues was accompanied by growth in the size of the charter bus fleet. Figure 13-3 shows that the number of vehicles used in charter service peaked at 3,305 buses in 1996 before declining to 2,562 in 1998. Data is not broken down by bus type.

Figure 13-4 shows that while the number of vehicles used in charter bus operations fluctuated during the 1990s, the average use made of each vehicle steadily increased, from a low of 40,000 kilometres in 1993 to over 62,000 kilometres in 1998.

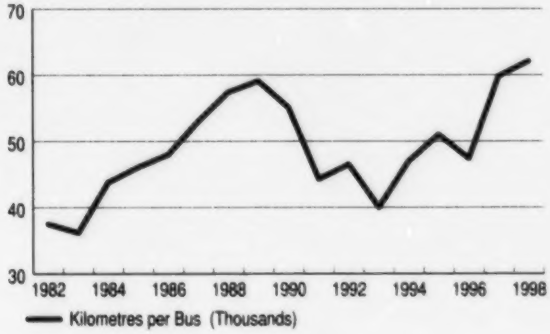
The expansion in charter service is also indicated by an increase in annual bus-kilometres. Since 1991, bus-kilometres have increased by 62 per cent.

FIGURE 13-3: CHARTER BUS FLEET SIZE, 1982 - 1998



Source: Statistics Canada, Cat. 53-215

FIGURE 13-4: CHARTER BUS FLEET UTILIZATION, 1982 - 1998

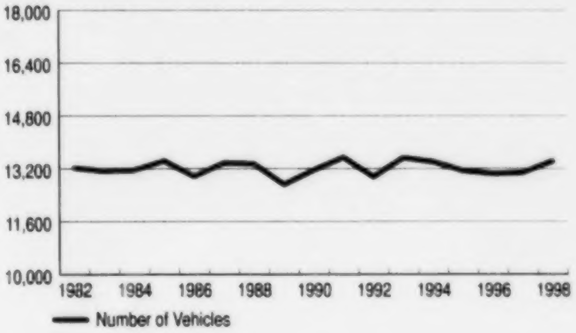


Source: Statistics Canada, Cat. 53-215

URBAN TRANSIT BUS SERVICES

The number of vehicles used for urban transit in Canada has remained fairly stable during the 1990s at between 13,000 and 13,500 a year, as has the utilization rate, in the range of 55,000 to 58,000 kilometres per vehicle per year. Figure 13-5 shows the number of buses in Canada's urban fleet from 1982 to 1998.

FIGURE 13-5: URBAN TRANSIT FLEET SIZE, 1982 - 1998



Source: Statistics Canada, Cat. 53-215

The composition of the fleet has changed over the past five years, with significantly fewer motor coaches in operation. To make services more accessible, low-floor buses are being added to fleets in cities such as Vancouver, Calgary, Thunder Bay, Kitchener and Montreal. The number of these buses in operation has increased significantly over the past two years.

Table 13-3 profiles Canada's urban transit fleet by category from 1991 to 1998.

The number of passengers using urban transit has remained fairly constant since 1994, after declining in the early 1990s. In 1998, 1.41 billion passengers used urban transit, equalling the level attained in 1992. The ridership level in 1998 was 2.3 per cent higher than in 1997.

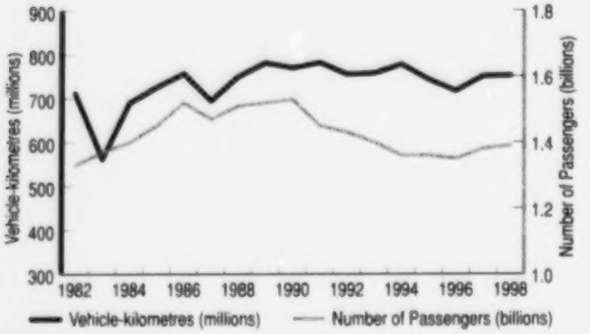
TABLE 13-3: URBAN TRANSIT FLEET COMPOSITION, 1991 - 1998

	1991	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*
Number of carriers reporting	65	74	74	84	80	77	65	62
Standard motor bus	10,474	9,757	10,196	10,085	9,855	9,622	9,030	8,554
Low-floor bus		135	145	188	305	499	1,019	1,827
Trolley coach	332	358	308	344	304	319	322	315
Articulated bus	458	364	373	359	306	287	287	297
Light rail vehicle	527	500	547	547	548	520	520	520
Heavy rail vehicle	1,379	1,735	1,679	1,381	1,381	1,373	1,381	1,395
Commuter rail vehicle				331	359	359	336	346
Other	372	107	279	176	82	70	182	169
Total vehicles	**13,542**	**12,956**	**13,527**	**13,411**	**13,140**	**13,049**	**13,077**	**13,423**

Source: Statistics Canada, Cat. 53-215

With the size of the urban transit fleet remaining fairly stable during the 1990s, Statistics Canada reports that the total distance travelled was also relatively stable during this period, at around 750 million kilometres. Figure 13-6 shows these trends in urban transit from 1982 to 1998.

FIGURE 13-6: LONG-TERM TRENDS IN URBAN TRANSIT, 1982 – 1998



Source: Statistics Canada, Cat. 53-215

AUTOMOBILE TRANSPORTATION

The Canadian Vehicle Survey referred to in last year's report has been undertaken to provide much-needed data about transportation in Canada. With results from the survey, it will be possible to derive annual estimates of vehicle-kilometres for all vehicles on the road, including automobiles. Annual estimates for 1999 will be available in the summer of 2000. Among other findings, the survey results will provide information on automobile use, such as the purpose and length of each trip, start and finish times, driver demographics, and number of occupants, not to mention vehicle type.

The survey frame for the Canadian Vehicle Survey is drawn from provincial and territorial registration file information on vehicles. This information is, in itself, a source of valuable information. As Table 13-4 shows, a total of 16,538,054 light vehicles (vehicles weighing less than 4,500 kilograms) were registered in Canada in 1999. More than 85 per cent of these vehicles were registered in one of four provinces: Ontario (37.3 per cent), Quebec (23.2 per cent), British Columbia (13.2 per cent) and Alberta (11.4 per cent). The four Atlantic provinces accounted for 7.5 per cent of the light vehicles, while Manitoba and Saskatchewan together made up 7.1 per cent. The three territories accounted for 0.2 per cent.

TABLE 13-4: REGISTERED LIGHT VEHICLES BY PROVINCE/TERRITORY, 1999

Province/Territory	*Light vehicles*	*Per cent of all Registered vehicles*
Newfoundland	240,212	96.7
Prince Edward Island	70,600	93.8
Nova Scotia	499,193	96.5
New Brunswick	421,769	96.2
Quebec	3,843,729	97.3
Ontario	6,174,461	96.9
Manitoba	566,581	95.9
Saskatchewan	615,965	89.3
Alberta	1,878,151	91.1
British Columbia	2,185,877	96.4
Yukon	22,488	90.1
Northwest Territories	16,896	93.1
Nunavut	2,105	84.9
Canada	16,538,054	95.8

Source: Special tabulations by Statistics Canada for the Canadian Vehicle Survey, from registration files provided by all provinces and territories

Dividing the population of each province and territory by the number of light vehicles registered provides a crude indicator of the importance of the automobile to Canadians in satisfying their passenger transportation needs. For the country as a whole, there was one light vehicle registered for every 1.85 Canadians in 1999.

At the provincial level, the ranking of persons per vehicle was as follows: Alberta (1.58), Saskatchewan (1.67), New Brunswick (1.79), British Columbia (1.84), Ontario (1.87), Nova Scotia (1.89), Quebec (1.92), Prince Edward Island (1.95), Manitoba (2.02) and Newfoundland (2.25). Far more than a reflection of regional economic disparities, the regional rankings might be explained in terms of a number of factors. These include access to urban transit systems, population density, age distribution of local populations, degree of urbanization, relative size of urban areas, degree of urban sprawl, mix of local economic activities, level of taxation (including taxes on fuel), and degree of congestion.

In the territories, Nunavut had a ratio of 12.83 residents per registered light vehicle, compared with a ratio of 1.38 in the Yukon and 2.49 for Northwest Territories.

MARINE TRANSPORTATION

CRUISE SHIP TRAFFIC

Cruise business in the Port of Vancouver recorded its 17th consecutive year of growth in 1999, with a passenger count of nearly 948,000.

It was also the best year ever for the Port of Halifax, with the number of passengers visiting the port reaching nearly 108,000, more than double the number for 1998. Most port visitors arrive or depart on cruises between New York and Halifax or on five-day trips from New York to Halifax and Saint John.

Traffic was up overall for the Atlantic ports. The Cruiseship Authority of Newfoundland and Labrador reported a record year for cruise ship visits, with vessels calling at 17 different ports and making a total of 60 calls, bringing over 25,000 passengers. With the rules for vessels transiting under the Confederation Bridge clarified, more international cruise vessels called in Prince Edward Island: 16 ships and 7,030 passengers visited Charlottetown in 1999, up from only 2,115 passengers in 1998.

The boom in Atlantic cruise business can be explained in part by the collective marketing efforts of both the Atlantic Canada Cruise Association (formed in 1998) and the New Atlantic Frontier, a group of about 30 ports in a loop from New York to Montreal that have pooled their marketing resources.

Montreal and Quebec City recorded fewer cruise visitors in 1999. The grounding of the *Norwegian Sky* in the St. Lawrence and its subsequent removal from service for repairs reduced the number of calls it was able to make in Quebec City this year.

Table 13-5 shows the cruise ship traffic at major Canadian ports from 1990 to 1999.

TABLE 13-5: CRUISE SHIP TRAFFIC AT MAJOR CANADIAN PORTS, 1990 – 1999

(Passengers)

Year	*Vancouver*	*Montreal*	*Quebec City*	*Halifax*	*Saint John*
1990	388,323	30,869	34,783	24,423	1,748
1991	423,928	47,047	51,363	43,512	3,402
1992	449,239	34,872	41,141	30,112	5,500
1993	519,942	30,626	38,642	30,917	12,379
1994	591,409	33,920	36,401	37,717	23,629
1995	596,744	27,384	38,981	30,257	12,226
1996	701,547	19,078	21,464	36,584	8,543
1997	816,537	29,324	36,569	44,328	19,813
1998	873,102	32,583	43,838	47,987	28,418
1999[1]	947,659	18,306	36,389	107,837	40,000

[1] Preliminary

Source: Canada Port Authorities

No federal department keeps formal records of the number of passenger trips in domestic cruise operations. Yet the Canadian Passenger Vessel Association, which represents many of the larger operators, in its annual survey for 1998, accounted for 5.77 million passengers during the year on 115 vessels ranging from 12 gross registered tonnes (GRT) to over 400 GRT.

FERRY TRAFFIC

Traffic figures for 1999 for all members of the Canadian Ferry Operators Association (CFOA) are not yet available. The relative size of their operations is, however, evident in the traffic figures for 1998.

British Columbia Ferry Corporation, by far the largest operator in Canada, carried approximately 21.4 million passengers and 7.8 million vehicles during the 1998/99 fiscal year. Ferry services operated by British Columbia's Ministry of Transportation and Highways carried a further 5.2 million passengers and 2.9 million vehicles.

La Société des traversiers du Québec carried 5.5 million passengers and 1.9 million vehicles, while Marine Atlantic reported carrying 444,425 passengers, 138,850 passenger vehicles and 71,311 trucks in 1998. (The 1998 figures represent the first year of Marine Atlantic's reduced mandate and are only for the services linking Newfoundland to the mainland of Canada.) Preliminary figures for 1998 indicate that the remaining CFOA members accounted for approximately 4.8 million passengers and 2.1 million vehicle crossings.

AIR TRANSPORTATION

GOVERNMENT POLICY INITIATIVES

In May, Canada was an active participant, as a Member of the Council and host nation, in the meeting of the International Civil Aviation Organization (ICAO) in Montreal. The *Montreal Convention* developed at this meeting is a new legal regime dealing with the liability of air carriers in the event of the death or injury of a passenger, loss of baggage or cargo, or delay of international flights. Once ratified by at least 30 of the ICAO's 185 member states, the *Montreal Convention* will allow victims to claim damages, regardless of whether the carrier is at fault. It will also permit damage claims resulting from a passenger death or injury to be filed in the country where the victim lived and will require airlines to provide immediate financial assistance to victims' relatives, with amounts to be deducted later from the final settlement.

The major feature of the *Montreal Convention* is the concept of unlimited liability, in contrast to the 1929 *Warsaw Convention* it replaces. Whereas the old regime set a limit of approximately US$8,300 in case of death or injury to passengers, the *Montreal Convention* introduces a two-tier system. The first tier provides for the strict liability of a carrier of up to 100,000 Special Drawing Rights (approximately US$194,325[1]) regardless of fault by a carrier. The second tier is based on a presumption of fault of a carrier and has no limit of liability. The Government of Canada is committed to begin ratifying the *Montreal Convention* in 2000.

On the domestic front, the period from August to December 1999 saw a number of private sector and government initiatives related to the restructuring of the Canadian airline industry. See Chapter 11, *Structure of Transportation Industry*, for more details.

BILATERAL INITIATIVES

During 1999, there was a progressive revision of Canada's bilateral agreements related to the opportunities created by the federal Transport Minister's June 1998 statement on international air policy. This statement permitted Air Canada and Canadian Airlines each to select five countries to serve on a code-share basis; in each country, the other would be the designated Canadian air carrier for own-aircraft flights. Further to that statement, and following efforts made during 1998, Canada successfully renegotiated its bilateral agreements with Thailand and Finland in 1999.[2]

Air Canada became entitled to provide code-share services to Thailand but is restricted to routings across the Atlantic. (Canadian Airlines suspended service to Thailand on January 25, 2000.) Thai International Airways continues to enjoy access to Toronto and Montreal from all cities in Thailand but presently does not exercise these rights.

Canadian Airlines gained the right to provide code-share service with Finnair, while Air Canada could use its code-share services with SAS and Lufthansa. Full liberal code-sharing provisions will take effect in the summer of 2000, allowing each country to designate multiple airlines to provide direct, intermediate and beyond services.

The Minister also announced that the Taiwan market would become eligible for a second designation. As a result, both Air Canada and EVA Air introduced service between Vancouver and Taipei in the summer of 1999, EVA Air on June 3 and Air Canada on July 5. Both airlines carry each other's code on their flights. Foreign policy considerations preclude there being a bilateral air agreement between Canada and Taiwan, but air services are unabled pursuant to a ministerial directive with the concurrence of the Minister of Foreign Affairs.

New agreements were reached with Romania and the United Arab Emirates. The revised agreement with Romania permits Air Canada to offer service to Bucharest via Frankfurt, code-sharing with Lufthansa. Romania's airline, TAROM, gained the right to serve Montreal from Romania and to fly beyond to New York and Chicago. TAROM introduced twice-weekly, own-aircraft service to Montreal in June.

Canada also concluded an inaugural agreement with the United Arab Emirates, permitting each country to designate an airline to provide service between any city in either country, either with its own aircraft or by code-sharing. Air Canada became entitled to offer code-share services via London with Emirates Air and via Frankfurt to Dubai with either Lufthansa or Emirates Air.

All bilateral negotiations were suspended from August until the end of 1999 while industry restructuring took place. Table 13-6 lists the bilateral air agreements in force at the end of 1999.

TABLE 13-6: COUNTRIES / TERRITORIES WITH BILATERAL AIR AGREEMENTS WITH CANADA AS OF DECEMBER 31, 1999

Antigua
Argentina
Australia
Austria
Bahamas
Barbados
Belgium
Brazil
Bulgaria
Cayman Islands
Chile
China
Costa Rica
Cuba
Czech Republic
Denmark
Dominican Republic
Egypt
El Salvador
Fiji
Finland
France
Germany
Greece
Guatemala
Haiti
Hong Kong
Hungary
Iceland[1]
India
Indonesia
Ireland
Israel[2]
Italy
Ivory Coast
Jamaica
Japan
Jordan
Lebanon
Malaysia
Mexico
Morocco
Netherlands
Netherlands Antilles
New Zealand
Nicaragua
Norway
Pakistan
Panama
Peru
Philippines
Poland
Portugal
Romania
Russia
St. Kitts and Nevis
St. Lucia
Saudi Arabia
Singapore[1]
South Korea
Spain
Sweden
Switzerland
Thailand
Trinidad and Tobago
Turkey
Ukraine
United Arab Emirates
United Kingdom
Venezuela

[1] Services to Iceland and Singapore are being operated under memoranda of understanding that are in force.

[2] Services to Israel are being operated under temporary arrangements.

Source: Transport Canada, Air Policy

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[1] On February 28, 2000, one Special Drawing Right = C$0.5146.

[2] As a follow-up to the statement, Canada renegotiated its bilateral agreements with New Zealand, Mexico and the Netherlands in 1998 to facilitate the authorization of new services pursuant to the Minister's statement. Canadian Airlines was given the right to provide code-share services to Finland.

DOMESTIC SERVICES AND TRAFFIC

Domestic passenger traffic continued to grow in 1998, albeit at a lower rate than 1996 and 1997. Preliminary airport statistics indicate moderate passenger growth of 2.4 per cent for 1999. The change in the level of passenger traffic is attributed in part to changes in service levels and patterns provided by the industry.

Table 13-7 summarizes the growth of domestic air travel over the past ten years. It shows five consecutive years of growth since 1994. The regional distribution of passenger traffic is portrayed in Figure 13-7.

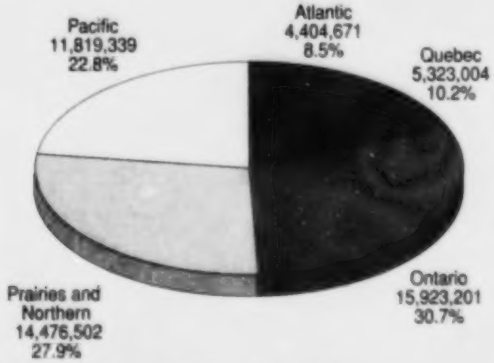
TABLE 13-7: DOMESTIC PASSENGER TRAFFIC, 1988 – 1998

Year	*Thousands*	*Per cent change*
1988	23,336	-
1989	22,784	(2.4)
1990	22,784	0.0
1991	20,463	(10.2)
1992	20,500	0.2
1993	19,676	(4.0)
1994	19,902	1.1
1995	20,869	5.0
1996	23,371	11.9
1997	25,224	7.9
1998	25,973	3.0

Note: Passenger traffic is an approximation that is based on enplaned and deplaned passengers divided by two to avoid the double counting of most passengers.

Source: Statistics Canada

FIGURE 13-7: DOMESTIC PASSENGER TRAFFIC BY REGION, 1998



Note: Enplaned and deplaned passengers (passengers double-counted).

Source: Aviation Statistics Centre, Statistics Canada, Statements 2.4 and 6

Airlines served several cities with new or additional scheduled air services during 1999, as shown in Table 13-8.

TABLE 13-8: NEW OR ADDITIONAL SCHEDULED AIR SERVICES, 1999

City-pairs	*Service*	*Airline*
Kitchener/Waterloo-Ottawa	2x daily non-stop	Trillium Air
Ottawa–Iqaluit	6x weekly	Air NorTerra
Calgary–Ottawa	2x daily non-stop	Air Canada
Toronto–Victoria	1x daily non-stop, seasonal	Air Canada
Calgary–Halifax	1x daily non-stop	Canadian Airlines
Prince George–Calgary	1x daily non-stop	WestJet
Prince George–Vancouver	1x daily non-stop	WestJet
Prince George–Victoria	1x daily non-stop	WestJet
Calgary–Thunder Bay	1x daily non-stop	WestJet
Edmonton–Grande Prairie	1x daily non-stop	WestJet

Source: Transport Canada, Air Policy

In some cases, these services were a competitive response to existing services. Air NorTerra's Ottawa–Iqaluit service, for example, competed with First Air's service. WestJet's Grande Prairie–Edmonton service competed directly with those of AirBC and Canadian Regional. The route between Calgary and Halifax was also contested between the new service provided by Canadian Airlines and the additional service provided by Air Canada.

Operators providing regional and local air services in Quebec and Atlantic Canada moved to provide air services to most communities served by InterCanadien immediately after it suspended its operations in November. Because November is traditionally in the low traffic season, much of the traffic in Quebec and Atlantic Canada that might not have been accommodated otherwise was absorbed by Air Nova. There was also a gradual restoration of service during December by InterCanadien's commercial partners, Canadian Regional and Ontario Regional. Ontario Regional had already assumed many of the regional routes served by InterCanadien during October. As a result of InterCanadien's suspended operations, however, Charlo and Chatham/Miramichi, New Brunswick, and Stephenville, Newfoundland, were without air service.

Table 13-9 summarizes the level of competition in the top 25 markets, in terms of seats offered. It shows that Air Canada and Canadian Airlines combine for more than 50 per cent of each of the markets. WestJet's penetration of the western Canadian market is notable, considering that the airline has been operating only four years. Also of note are the inroads made by Canada's jet operators of long-haul charter air services — Air Transat, Canada 3000 and Royal Airlines — which had virtually no domestic presence prior to 1988.

TABLE 13-9: COMPETITION IN DOMESTIC AIR MARKETS AS OF JULY 1, 1999

			— Capacity Market Shares (per cent) —				
Rank	*Market*[1]	*Daily Seats*[2]	*Air Canada*[3]	*Canadian Airlines*[3]	*WestJet*	*Charter*	*Others*
1	Montreal–Toronto	4,973	64.4	22.0		13.6	
2	Toronto–Vancouver	4,481	43.3	41.7		15.1	
3	Calgary–Vancouver	4,036	32.3	45.3	15.9	6.5	
4	Calgary–Toronto	3,160	48.2	39.8		12.0	
5	Ottawa–Toronto	2,999	66.7	33.3			
6	Calgary–Edmonton	2,337	31.1	49.8	19.1		
7	Halifax–Toronto	2,184	55.5	32.9		11.6	
8	Toronto–Winnipeg	1,853	66.8	22.4		10.8	
9	Edmonton–Toronto	1,594	51.8	35.0		13.2	
10	Vancouver–Victoria	1,575	41.3	58.7			
11	Edmonton–Vancouver	1,538	26.5	44.8	20.1	8.7	
12	Calgary–Winnipeg	1,050	38.5	30.5	31.0		
13	Kelowna–Vancouver	891	23.2	39.3	37.5		
14	Halifax–St. John's	830	65.1	29.1		5.8	
15	Prince George–Vancouver	810	23.0	49.5	27.5		
16	Montreal–Quebec City	797	42.8	52.0			5.1
17	Montreal–Ottawa	711	46.4	44.9			8.7
18	Halifax–Montreal	687	64.9	35.1			
19	Vancouver–Winnipeg	687	34.1	43.7		22.2	
20	London–Toronto	649	69.9	30.1			
21	Calgary–Regina	649	34.5	35.1	30.4		
22	Ottawa–Vancouver	644	37.9	56.5		5.6	
23	Thunder Bay–Toronto	643	61.9	35.4		2.7	
24	Calgary–Saskatoon	628	37.3	36.8	25.9		
25	Calgary–Kelowna	621	20.4	35.4	44.2		

1 The top 25 markets are ranked on the number of daily seats.
2 The number of daily seats is defined as the average number of seats offered on non-stop flights in each direction.
3 Data for Air Canada and Canadian Airlines include the number of seats operated by regional code-share partners.

Source: Official Airline Guide and airline timetables

Table 13-10 summarizes the number of non-stop links to airports in the National Airport System (NAS). It indicates that the number of air links depends not only on the amount of traffic generated at a site but also (as with Winnipeg and Yellowknife) on each airport's role as a gateway to remote communities.

CANADA–US TRANSBORDER SERVICES AND TRAFFIC

Growth in transborder traffic continued for the fifth consecutive year since the signing in February 1995 of the Canada–U.S. Air Transport Agreement (i.e. the "Open Skies" Agreement). Between 1994, the last full year before the new air agreement took effect, and 1998, this market grew from 13.6 million passengers to 18.7 million passengers. Preliminary airport statistics indicate that moderate growth continued in 1999, with an estimated 4.2 per cent increase. Figure 13-8 plots the growth in this market.

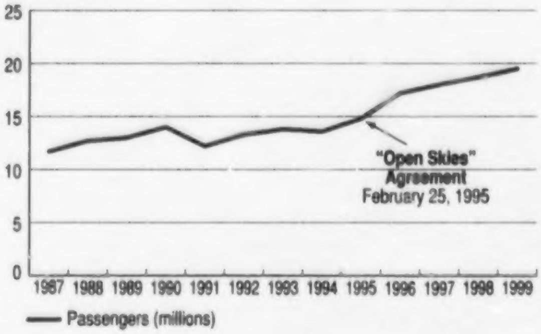
TABLE 13-10: NUMBER OF DOMESTIC MARKETS SERVED INCLUDING CHARTERS AS OF JULY 1, 1999

	Number of Markets with Non-stop Flights			
Airport[1]	*NAS Airports*	*Non-NAS Airports*	*Total*	*Number of Airlines*[2]
Calgary	13	11	24	7
Charlottetown	2	1	3	3
Edmonton	11	5	16	7
Fredericton	6	1	7	2
Gander	3	2	5	3
Halifax	12	5	17	5
Iqualuit	1	10	11	4
Kelowna	4	1	5	3
London	2	2	4	2
Moncton	6	2	8	4
Montreal/Dorval[3]	10	16	26	8
Ottawa	11	5	16	5
Prince George	3	4	7	3
Quebec City	4	9	13	3
Regina	6	1	7	5
Saint John	5	0	5	3
St. John's	3	4	7	6
Saskatoon	6	1	7	6
Thunder Bay	3	8	11	6
Toronto	19	10	29	6
Vancouver	13	21	34	11
Victoria	7	1	8	6
Whitehorse	1	2	3	4
Winnipeg	10	20	30	10
Yellowknife	1	16	17	8

1 All airports shown are part of the National Airport System (NAS).
2 Regional airlines are counted as an airline only if they do not code-share with a major airline.
3 There are no domestic services to Montreal/Mirabel.

Source: Official Airline Guide and airline timetable

FIGURE 13-8: CANADA – US TRAFFIC, 1987 – 1999



Source: Aviation Statistics Centre, Statistics Canada, Statements 2, 4 and 6 and Transport Canada

In the transborder market, Canadian airlines have dramatically improved their percentage of passengers, to the extent that in 1998 they carried slightly more passengers than US airlines. This increase, however, did not occur at the expense of the US industry, whose airlines have carried 20 per cent more traffic since 1994. Table 13-11 encapsulates the growth of the transborder market since the new agreement in 1995. Appendices 13-1 and 13-2, show entry, exit and ongoing activity in the Canada–U.S. market in terms of airline, air carrier domicile and points served.

TABLE 13-11: CANADA–US AIR PASSENGERS: SCHEDULED, REGIONAL AND CHARTER SERVICES, 1991 – 1998

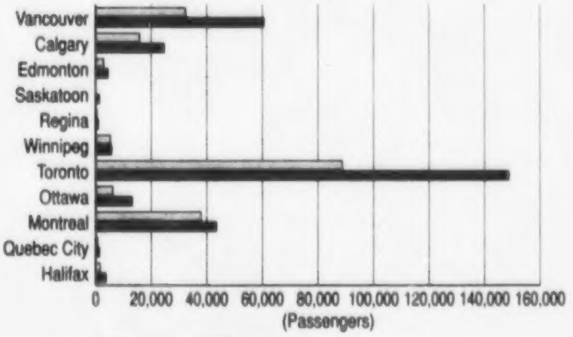
	Canadian Carriers		US Carriers		All Carriers	
Period	*Passengers (thousands)*	*Market share (Per cent)*	*Passengers (thousands)*	*Market share (Per cent)*	*Passengers (thousands)*	*Annual change (Per cent)*
1991	5,182	42.3	7,057	57.7	12,239	--
1992	5,619	42.2	7,688	57.8	13,307	3.6
1993	5,634	40.9	8,146	59.1	13,780	3.6
1994	5,908	43.3	7,735	56.7	13,643	(1.0)
1995	6,482	43.7	8,367	56.3	14,849	8.8
1996	7,850	45.7	9,317	54.3	17,167	15.6
1997	8,883	49.5	9,068	50.5	17,951	4.6
1998	9,484	50.6	9,257	49.4	18,741	4.4

Notes: Excludes passengers carried by non-Canadian and non-US carriers.

Source: Aviation Statistics Centre, Statistics Canada, Statements 2, 4 and 6, and Transport Canada

Figure 13-9 compares the number of seats currently offered in the transborder market with those offered in 1994. There is a marked improvement in the number of seats offered in most communities.

FIGURE 13-9: AVERAGE CANADA - US SCHEDULED CAPACITY (EXCLUDING CHARTERS), 1994 AND 1999



Source: Transport Canada, Air Policy

Table 13-12 shows the number of US airports served from each NAS airport. These numbers are proportional to the number of transborder passengers served at these sites. Note that the table does not include services offered by the Canadian leisure airlines (Air Transat, Canada 3000, Royal Airlines and Sky Service), although these airlines do play a major role in US resort destinations, particularly during the winter months.

TABLE 13-12: NUMBER OF US AIRPORTS SERVED (SCHEDULED NON-STOP ONLY) AS OF JULY 1, 1999

	Number of US Airports	*Number of Airlines* Canada	US
Calgary	10	2	6
Edmonton	4	2	2
Halifax	2	1	2
Kelowna	1	-	1
London	2	-	2
Montreal / Dorval	22	1	5
Ottawa	9	2	5
Quebec City	2	1	2
Regina	1	-	1
Saskatoon	1	-	1
Thunder Bay	1	-	1
Toronto	45	2	8
Vancouver	20	2	8
Victoria	1	-	1
Whitehorse	2	1	1
Winnipeg	3	1	1

Notes: Includes only airports with scheduled transborder service.
Regional airlines are counted as an airline only if they do not code-share with a major airline
Includes seasonal services.

Source: Official Airline Guide and airline timetables

Very high levels of competition and poor financial results prompted a realignment of transborder services along the West Coast in the spring of 1999. Canadian Airlines suspended its service to San Jose in January and ceased services to Seattle, Portland, Las Vegas and San Diego in April. Withdrawal of these services was accompanied by the announcement of a code-share agreement between Canadian Airlines and Alaska Airlines, which serves seven US cities from Vancouver along with its affiliate, Horizon Air. The decision by Canadian Airlines to code-share with Alaska Airlines closely followed American Airlines' announcement of a code-share with Alaska Airlines in US domestic markets. In a related move, American Airlines acquired start-up Reno Air during 1999. As part of the realignment of services, Reno Air withdrew from the Vancouver market when it terminated its Vancouver–Reno service in April.

Despite the withdrawal of services along the West Coast, Canadian Airlines was active in other markets in 1999. Edmonton–Chicago and Calgary–Houston routes were added to the summer schedule. An Ottawa–Raleigh service was added by Canadian Regional in January 1999.

Canadian Airlines continued service in the high-density markets between Vancouver and Los Angeles/San Francisco.

American Airlines fully restored its code-share relationship with Canadian Airlines in 1999. American Airlines had been forced to reduce code shares during 1998 to comply with the contract with its pilots.

Air Canada continued its expansion in transborder markets, adding eight new routes in 1999, four of them with its own equipment. The most significant of the new routes were Toronto–San Diego, and a new Winnipeg– Denver service by its subsidiary, Air BC. Air Canada also launched twice daily non-stop service between Chicago and Calgary in May. In July, Air BC launched a second daily non-stop flight from Edmonton to Denver shortly after Delta Airlines' exit from the Edmonton–Salt Lake City market. One month later, Air Canada launched its 50th new route since Open Skies with service between Ottawa and Washington's National Airport. In the fall, Air Canada launched daily non-stop service between Halifax and Washington Dulles.

US carrier Continental Airlines added three new services, including a new Quebec–Newark service by Continental Express. With its spring 1999 schedule, Delta Airlines terminated service on three transborder routes: Edmonton–Salt Lake City, Ottawa–New York/LaGuardia and Toronto–Boston. In December, US Airways reinstated its Toronto-Washington/Reagan services after a four-year hiatus.

Table 13-13 lists the new transborder routes introduced during 1999.

TABLE 13-13: NEW DIRECT NON-STOP TRANSBORDER SCHEDULED AIR SERVICES IN 1999

Route		*Airline*
Calgary	Chicago	Air Canada
Calgary	Houston	Canadian Airlines
Edmonton	Chicago	Canadian Airlines
Halifax	Washington/Dulles	Air Canada
Montreal/Dorval	Cleveland	Continental Express
Montreal/Dorval	Portland, Maine	Air Canada/Air Nova
Ottawa	Raleigh	Canadian Regional
Ottawa	Washington/Reagan	Air Canada
Quebec City	New York/Newark	Continental Express
Toronto/Pearson	Rochester	Air Canada/Air Ontario
Toronto/Pearson	San Diego	Air Canada
Toronto/Pearson	Syracuse	Air Canada/Air Ontario
Toronto/Pearson	Washington/Reagan	US Airways/Mesa
Vancouver	New York/Newark	Continental (seasonal)
Vancouver	St. Louis	Trans World (seasonal)
Winnipeg	Denver	Air Canada/AirBC

Source: Transport Canada, Air Policy

Other International Services and Traffic

The number of international passengers grew by 5.9 per cent in 1998, with most of the growth in the Atlantic and Southern markets. Table 13-14 shows the growth of international passenger traffic between Canada and countries other than the US from 1991 to 1998. The pattern of very high growth of passenger traffic across the Pacific was interrupted in 1998. However, even the small growth figures can be considered a positive result in light of the weakness of the Asian economy.

TABLE 13-14: NUMBER OF INTERNATIONAL DESTINATIONS SERVED BY THE NATIONAL AIRPORT SYSTEM (NAS) (SCHEDULED DIRECT ONLY) AS OF JULY 1, 1999

Airport	*Number of International destinations*	*Number of Airlines* Canada	International
Calgary	3	2	-
Edmonton	1	1	-
Halifax	5	1	2
Iqaluit	2	1	1
Montreal/Dorval	24	2	14
Montreal/Mirabel	4	1	2
Ottawa	1	2	-
Quebec City	1	1	-
St. John's	2	1	1
Toronto	41	3	16
Vancouver	15	2	10
Whitehorse	1	-	1
Winnipeg	1	1	-

Notes: Includes only airports with scheduled international service service.
Includes seasonal services.

Source: Official Airline Guide and airline timetables

Moderate growth is expected to continue into 1999; preliminary airport statistics show a further 5.9 per cent growth in international passenger traffic.

Air Canada launched numerous new services in 1999, including routes to Copenhagen and Taipei. It launched additional services on a code-share basis to Amman, Amsterdam, Bucharest, Helsinki, Dubai and Abu Dhabi. Air Canada also increased the frequency of its flights between Toronto/Ottawa and London.

In May, Air Canada initiated five weekly non-stop flights between Toronto and Copenhagen. The SAS code is being carried on the transatlantic sector and beyond Toronto, while Air Canada gains access to the destinations beyond the SAS hub at Copenhagen. In June, Air Canada and EVA Air jointly launched a new Vancouver–Taipei non-stop service, with each carrier flying between the two points on alternate days.

In March, Air Canada and Royal Jordanian announced summer plans for code-share service between Canada and Jordan via London. In May, Air Canada and British Midland announced the launch of code-share service to Amsterdam. In August, pursuant to Canada's new bilateral agreement with the United Arab Emirates, Air Canada launched daily code-share service to Dubai and Abu Dhabi in co-operation with Emirates Air.

Air Canada also announced plans to extend its network to Mexico in September, using opportunities gained under the Minister's June 1998 statement.

Further to the Minister's January 1999 statement allowing the designation of a second carrier to serve Taiwan, Air Canada introduced three weekly flights between Vancouver and Taipei in July. Air Canada's new service followed the introduction of three weekly flights by EVA Air in June. Both airlines have agreed to carry the other airline's code on their flights.

Air Canada permanently suspended its London–Delhi service in June. The service had operated four flights per week during the winter traffic season. Capacity on the route was reallocated to the London–Toronto/Ottawa routes. Its Edmonton–London flights were suspended in the fall.

Canadian Airlines also had a few changes in its winter 1999/2000 schedule, taking over Toronto–Milan service from Alitalia, which had introduced service in June following completion of improvements at Milan's Malpensa airport. Under an agreement between the two airlines, Alitalia flies to Milan and Rome during the summer traffic season and Canadian Airlines operates during the winter traffic season. Canadian Airlines' year-round Montreal–Rome service was an exception to this arrangement. In April, Canadian Airlines started daily service from Toronto to Moscow via London in co-operation with British Airways.

At the same time, Canadian Airlines suspended non-stop Toronto–Tokyo service and transferred those frequencies to support its Vancouver–Tokyo service. The airline also announced that it was suspending service to Bangkok and Manila as a result of the new code-share agreement with Cathay Pacific. Services to Manila were suspended in the fall of 1999, and services to Bangkok are scheduled to end in January 2000.

Other changes include the introduction of Toronto–Budapest flights by Malev and Montreal–Bucharest flights by Tarom during the summer. Malaysia Airlines cancelled its Vancouver–Kuala Lumpur flights in January. Iberia suspended its Montreal–Madrid service in October.

In December, Air Canada and Canadian Airlines agreed to the transfer of authorities that would permit the reinstitution of daily non-stop Toronto–Tokyo services. Air Canada indicated that it intended to inaugurate a direct Toronto–Tokyo service in the summer of 2000. Air Canada also announced that it would begin daily Toronto–Hong Kong service and would seek to use dormant authorities for several other routes. All changes planned are subject to the successful negotiation of the necessary route rights with other countries.

Table 13-15 shows the number of international destinations served by scheduled airlines from NAS airports. Note that the bulk of international traffic is concentrated in Canada's three largest cities: Montreal, Toronto and Vancouver.

TABLE 13-15: CANADA – INTERNATIONAL AIR PASSENGERS SCHEDULED, REGIONAL AND CHARTER SERVICES, 1991 – 1998

Period	*Atlantic*	*Pacific*	*Southern*	*Total*
		(Millions of passengers)		
1991	4.776	1.000	2.222	7.998
1992	5.221	1.140	2.353	8.714
1993	5.345	1.288	2.444	9.077
1994	5.802	1.478	2.560	9.840
1995	6.147	1.760	2.614	10.521
1996	6.413	1.920	2.574	10.907
1997	6.699	2.304	2.905	11.908
1998	7.124	2.314	3.169	12.607
		(Per cent change)		
1991–92	9.3	14.0	5.9	9.0
1992–93	2.4	13.0	3.9	4.2
1993–94	8.6	14.8	3.9	8.2
1994–95	6.0	19.1	3.0	7.2
1995–96	4.3	9.1	(1.5)	3.7
1996–97	4.5	20.0	12.9	9.2
1997–98	6.3	0.4	9.1	5.9

Source: Aviation Statistics Centre, Statistics Canada, Statements 2, 4, and 6, and Transport Canada

Appendix 13-3 lists the international air services provided to and from Canada as of the end of 1999. These include foreign markets served by Air Canada and Canadian Airlines, as well as Canadian markets served by foreign carriers. This appendix also provides a partial list of foreign markets served by charter air carriers. It shows that 43 countries and territories currently serve same-plane scheduled services from Canada. Canadian air carriers serve 25 of these countries.

APPENDIX 13-1

STATUS OF TRANSBORDER SCHEDULED AIR SERVICES BY AIRLINE DOMICILE, 1991 – 1999

	Services Operated in February 1995			Pre-Agreement Services Suspended Since February 1995			Services Added Since February 1995			Services Operated as of December 1999		
Airport	*Canada*	*US*	*Total*	*Canada*	*US*	*Total*	*Canada*	*US*	*Total*	*Canada*	*US*	*Total*
Toronto/Pearson	14	23	37	1	11	12	32	12	44	45	24	69
Vancouver	6	10	16	1	5	6	4	17	21	9	22	31
Montreal/Dorval	7	10	17		3	3	5	6	11	12	13	25
Calgary	4	5	9	1	3	4	5	6	11	8	8	16
Ottawa	1	6	7		4	4	6	4	10	7	6	13
Halifax	2		2				1	2	3	3	2	5
Edmonton		3	3		2	2	2	1	3	2	2	4
Winnipeg	1	1	2				1		1	2	1	3
Others	5	8	13	5	2	7		6	6	0	12	12
Sub-total	**40**	**66**	**106**	**8**	**30**	**38**	**56**	**54**	**110**	**88**	**90**	**178**
Charter conversions	30		30	22		22				8		8
Total	**70**	**66**	**136**	**30**	**30**	**60**	**56**	**54**	**110**	**96**	**90**	**186**

Source: Transport Canada, Air Policy

APPENDIX 13-2

STATUS OF TRANSBORDER AIR SERVICES AS OF DECEMBER 31, 1999

Airport	*Current Services Introduced After February 24, 1995*	*Current Services Operated Before February 24, 1995*	*Pre-Agreement Services Suspended after February 24, 1995*	*New Services Subsequently Suspended*
Calgary	Chicago: American Chicago: Canadian Denver: United Houston: Air Canada Houston: Canadian Houston: Continental Los Angeles: Canadian Minneapolis: Northwest San Francisco: United Seattle: Alaska (R) Spokane: Air Canada (R)	Chicago: Air Canada Dallas: American Los Angeles: Air Canada Salt Lake City: Delta (R) San Francisco: Air Canada	Denver: Delta Los Angeles: Delta New York/Newark: Air Canada Spokane: United	Denver: Air Canada Las Vegas: Canadian (C) Las Vegas: Delta Palm Springs: Canadian (C) Phoenix: Canadian (C)
Edmonton International	Chicago: Canadian Denver: Air Canada (R) Seattle: Alaska (R)	Minneapolis: Northwest	Dallas: American Salt Lake City: Delta	Las Vegas: Canadian (C)
Fredericton				Boston: Air Canada (R)
Halifax	Boston: Delta (R) New York/Newark: Continental Washington/Dulles: Air Canada	Boston: Air Canada (R) New York/Newark: Air Canada (R)		Boston: Canadian (R) Detroit: Northwest Ft. Lauderdale: Canadian (C) New York/Kennedy: American (R) Orlando: Air Canada (C) Orlando: Canadian (C) St. Petersburg: Canadian (C) Tampa: Air Canada (C)
Hamilton		Pittsburgh: US Airways (R)		
Kelowna	Seattle: Alaska (R)			
Kenora	Minneapolis: Northwest (R)[1]			
London		Detroit: Northwest (R) Pittsburgh: US Airways (R)		
Moncton				Boston: Air Canada (R) Boston: Delta (R)
Montreal/Dorval	Atlanta: Delta Cleveland: Continental (R) Ft. Lauderdale: Air Canada (C) Hartford: Air Canada (R) Miami: American Minneapolis: Northwest New York/Kennedy: American (R) New York/Newark: Continental Orlando: Air Canada (C) Portland (Maine): Air Canada (R) San Francisco: Air Canada Washington/Dulles: Air Canada Washington/Reagan: Air Canada	Boston: Air Canada Boston: Delta (R) Chicago: Air Canada Chicago: American Cincinnati: Delta Detroit: Northwest Los Angeles: Air Canada Miami: Air Canada New York/LaGuardia: Air Canada New York/LaGuardia: Delta (R) New York/Newark: Air Canada Philadelphia: US Airways Pittsburgh: US Airways Tampa: Air Canada[1]	Baltimore: US Airways Hartford: Delta (R) Miami: Delta	Atlanta: Air Canada Dallas: American New York/Kennedy: Delta Philadelphia: Air Canada (R) Washington/Dulles: ValuJet Washington/Reagan: US Airways
Montreal/Mirabel			Boston: Northwest (R)	
Ottawa	Boston: Air Canada (R) Chicago: Air Canada Chicago: American Detroit: Northwest (R) New York/LaGuardia: Air Canada New York/Newark: Continental (R) Philadelphia: US Airways Raleigh: Canadian (R) Washington/Dulles: Air Canada Washington/Reagan: Air Canada	Boston: Delta (R) New York/Newark: Air Canada Pittsburgh: US Airways (R)	Albany: Delta (R) Baltimore: US Airways New York/Kennedy: US Airways (R) Syracuse: US Airways (R)	New York/Kennedy: American (R) New York/LaGuardia: Delta (R) Orlando: Canadian (C) St. Petersburg: Canadian (C)
Quebec City	New York/Newark: Continental (R)	Boston: Delta (R)	New York/Newark: Air Canada (R)	New York/Kennedy: American (R)

Continued

APPENDIX 13-2 (Continuation)

STATUS OF TRANSBORDER AIR SERVICES AS OF DECEMBER 31, 1999

Airport	*Current Services Introduced After February 24, 1995*	*Current Services Operated Before February 24, 1995*	*Pre-Agreement Services Suspended after February 24, 1995*	*New Services Subsequently Suspended*
Regina	Minneapolis: Northwest (R)		Minneapolis: Canadian (R)	
Saint John			Boston: Canadian (R) New York/Newark: Air Canada (R)	Boston: Delta (R)
Saskatoon	Minneapolis: Northwest			
Thunder Bay		Minneapolis: Northwest (R)		
Toronto/Pearson	Allentown: Air Canada (R) Atlanta: Air Canada Atlanta: Delta Boston: Canadian Charlotte: Air Canada Charlotte: US Airways (R) Chicago: Canadian Cleveland: Continental (R) Columbus: Air Canada (R) Columbus: US Airways (R) Dallas: Canadian Denver: Air Canada Ft. Lauderdale: Air Canada (C)[1] Ft. Myers: Air Canada (C)[1] Harrisburg: Air Canada (R) Houston: Continental Kansas City: Air Canada Las Vegas: Air Canada (C) Miami: American Miami: Canadian Milwaukee: Air Canada Milwaukee: Midwest Express Minneapolis: Air Canada Minneapolis: Northwest Nashville: Air Canada New Orleans: Air Canada New York/LaGuardia: Canadian New York/Newark: Continental Orlando: Air Canada (C)[1] Orlando: Canadian Philadelphia: Air Canada Phoenix: Air Canada Pittsburgh: Air Canada Pittsburgh: US Airways Providence: Air Canada (R) Raleigh: Air Canada Raleigh: Canadian (R) Richmond: Air Canada (R) Rochester: Air Canada (R) St. Louis: Air Canada St. Louis: Trans World San Diego: Air Canada San Jose: Air Canada Seattle: Air Canada Syracuse: Air Canada (R) Washington/Dulles: Air Canada Washington/Reagan: Air Canada Washington/Reagan: US Airways West Palm Beach: Air Canada (C)[1]	Baltimore: Air Canada (R) Baltimore: US Airways (R) Boston: Air Canada Chicago: Air Canada Chicago: American Chicago: United Cincinnati: Delta (R) Cleveland: Air Canada Dallas: American Dayton: US Airways (R) Detroit: Northwest Grand Rapids: Midwest Express (R) Hartford: Air Canada (R) Honolulu: Canadian Houston: Air Canada Indianapolis: US Airways (R) Los Angeles: Air Canada Miami: Air Canada New York/LaGuardia: Air Canada New York/LaGuardia: American New York/Newark: Air Canada Philadelphia: US Airways San Francisco: Air Canada San Francisco: United Tampa: Air Canada	Albany: Delta(R) Boston: US Airways Cleveland: US Airways (R) Hartford: Delta (R) Miami: Delta Nashville: American Pittsburgh: Delta Rochester: US Airways Syracuse: Delta (R) Tampa: Delta Washington/Dulles: Canadian (R) Washington/Dulles: Delta (R)	Boston: Delta (R) Cincinnati: Air Canada Dallas: Air Canada Ft. Lauderdale: Canadian (C) Ft. Myers: Canadian (C) Indianapolis: Air Canada (R) Nashville: Delta (R) Saginaw: Midwest Express (R) St. Petersburg: Canadian (C) Sarasota: Canadian (C) Tampa: American Tampa: Canadian Washington/Reagan: US Airways West Palm Beach: Canadian (C)
Toronto/City Centre				Syracuse: US Airways (R)

Continued

APPENDIX 13-2 (Continuation)

STATUS OF TRANSBORDER AIR SERVICES AS OF DECEMBER 31, 1999

Airport	*Current Services Introduced After February 24, 1995*	*Current Services Operated Before February 24, 1995*	*Pre-Agreement Services Suspended after February 24, 1995*	*New Services Subsequently Suspended*
Vancouver	Boston: Canadian Chicago: Canadian Dallas: American Dallas: Canadian Denver: United Detroit: Northwest[1] Honolulu: Air Canada (C) Houston: Continental Kahului/Maui: Air Canada (C) Las Vegas: Alaska Los Angeles: Alaska Los Angeles: United Minneapolis: Northwest New York/Kennedy: American New York/Newark: Continental[1] Palm Springs: Alaska[1] Phoenix: Alaska[1] Phoenix: America West St. Louis: Trans World[1] Salt Lake City: Delta (R) San Francisco: Air Canada San Francisco: Alaska San Francisco: United	Chicago: United Honolulu: Canadian Los Angeles: Canadian Portland: Air Canada (R) Portland: Alaska (R) Portland: Delta (R) San Francisco: Canadian Seattle: Air Canada (R) Seattle: Alaska (R) Seattle: United (R)	Bellingham: Alaska (R) Los Angeles: Delta San Francisco: Delta San Jose: American Seattle: Canadian (R) Spokane: Northwest	Atlanta: Delta Cincinnati: Delta Denver: Air Canada Las Vegas: America West Las Vegas: Canadian Los Angeles: Air Canada Miami: American Palm Springs: Canadian (C) Portland: Canadian (R) Reno: Reno Air Reno: Canadian (C) San Diego: Alaska San Diego: Canadian San Jose: Canadian (R)
Victoria		Seattle: Alaska (R)	Port Angeles: Alaska (R)	Seattle: Air Canada (R)
Whitehorse	Anchorage: Alaska (R)[1]			
Winnipeg	Denver: Air Canada (R)	Chicago: Air Canada Minneapolis: Northwest		Chicago: American Las Vegas: Canadian (C) Orlando: Air Canada (C) Palm Springs: Canadian (C)
Yarmouth			Boston: Air Canada (R)	

Notes: (R)- Denotes services operated by regional affiliates.
(C)- Denotes charter services operated by Air Canada and Canadian Airlines before February 24, 1995.

[1] Seasonal Service.

Source: Transport Canada, Air Policy

APPENDIX 13-3

INTERNATIONAL AIR SERVICES AS OF DECEMBER 31, 1999 (EXCLUDING CANADA–US TRANSBORDER AIR SERVICES)

Sector	*Foreign Points Served by Canadian Air Carriers*		*Canadian Points Served by Foreign Air Carriers*	*Major Charter Air Services*
	Air Canada	**Canadian**		
Atlantic	Copenhagen Frankfurt Glasgow London Manchester Paris Tel Aviv Zurich	London Milan Rome	Aeroflot: Montreal, Toronto Air France: Montreal, Toronto Air Ukraine: Toronto Alitalia: Toronto British Airways: Montreal, Toronto, Vancouver Czech Airlines: Montreal, Toronto El Al: Montreal, Toronto Icelandair: Halifax KLM: Montreal, Toronto, Vancouver Lufthansa: Toronto, Vancouver Malev: Toronto Olympic: Montreal, Toronto Pakistan International: Toronto Royal Air Maroc: Montreal Sabena: Montreal Swissair: Montreal TAROM: Montreal	Amsterdam Frankfurt Glasgow Lisbon London Manchester Paris Warsaw
Pacific	Hong Kong Osaka Seoul Taipei	Bangkok Beijing Hong Kong Nagoya Taipei Tokyo	Air China: Vancouver Cathay Pacific: Toronto, Vancouver Eva Airways: Vancouver Japan Airlines: Vancouver Korean Air: Toronto, Vancouver Mandarin: Vancouver Singapore Airlines: Vancouver	
Southern	Antigua Barbados Bermuda Fort-de-France Kingston Montego Bay Nassau Pointe-a-Pitre Port-au-Prince Port of Spain St. Lucia	Buenos Aires Mexico City Sao Paulo	BWIA: Toronto Cubana: Montreal, Toronto LACSA: Toronto Mexicana: Montreal, Toronto VASP: Toronto	Acapulco Aruba Cancun Ciego de Avila Holguin Ixtapa Manzanillo Mazatlan Montego Bay Nassau Puerto Plata Puerto Vallarta Punta Cana Santo Domingo Varadero
Other	Air Transat: Paris First Air: Kangerlussuaq		Air St. Pierre: Halifax, Montreal, St. John's, Sydney Greenlandair: Iqaluit	

Source: Transport Canada, Air Policy

PRICE, PRODUCTIVITY AND FINANCIAL PERFORMANCE IN THE TRANSPORTATION SECTOR

14

Between 1991 and 1998, productivity in transport industries has grown each ye
When markets are competitive and efficient, productivity gains can be passed on, partially or totally, to users in the form of lower prices.

The transport sector's economic performance gives a clear picture of this sector's contribution to the entire economy.

The economic performance of a sector can be determined by productivity gains over time and by the distribution of those gains among various economic agents. Of particular interest are the productivity gains passed on to users as lower prices. Table 14-1 shows the performance indicators for selected transport industries between 1991 and 1999.

TABLE 14-1: PERFORMANCE INDICATORS FOR SELECTED TRANSPORT INDUSTRIES AND THE ECONOMY

	Annual per cent	
	1991 – 1998	*1998 – 1999*
Productivity		
Selected Transport Industries	2.5	0.2[1]
Business Economy	1.7	1.5[2]
Price		
Selected Transport Industries	(0.4)	1.4[3]
Business Economy	1.6	1.5[3]
Output		
Selected Transport Industries	6.4	5.4[1]
Business Economy	3.1	2.6[2]

1 Change from 1997 to 1998.
2 Preliminary estimate.
3 Based on first half of the year 1999.

Source: Transport Canada, based on Statistics Canada files

Between 1991 and 1998, productivity growth in transport industries averaged 2.5 per cent a year. In 1998, this slowed to 0.2 per cent.

When markets are competitive and efficient, productivity gains can be passed on, partially or totally, to users in the form of lower prices. Between 1991 and 1998, the prices of selected transport industries[1] fell in real terms by 0.4 per cent per year. In 1999, the prices of the same firms increased nominally by 1.4 per cent. Part of the increase in transport demand since 1991 has come from the upturn of the economy. However, lower transport prices also contributed by generating stronger demand. Between 1991 and 1998, the output of large transport firms advanced annually by 6.4 per cent.

The rest of this chapter discusses the individual performance of each transport industry, giving highlights of the most recent year for which data is available and reviewing performance indicators. The analysis of the performance of the shipping industry could not be updated to 1998 as a result of data limitations.

Key statistics for each transport industry are presented in tabular form at the end of this chapter. Table 14-11 presents price and output indicators; Table 14-12 presents user and cost savings. Table 14-13 presents productivity and unit costs indicators, and Table 14-14 presents cost structures.

RAIL INDUSTRY

THE FREIGHT RAIL INDUSTRY

Freight railways in Canada generate a total of $7 billion in revenues annually. Of this, the two mainline railways combined account for 90 per cent, while the regional/short line railways account for the remaining ten per cent.

This report focuses on the performance of Canadian National and Canadian Pacific Railways' Canadian operations, although the financial analysis does include a brief discussion of the performance of regional/shortline railways.

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[1] Larger firms in rail freight, air and trucking account for 92 per cent of the revenues of all the firms reviewed in this chapter.

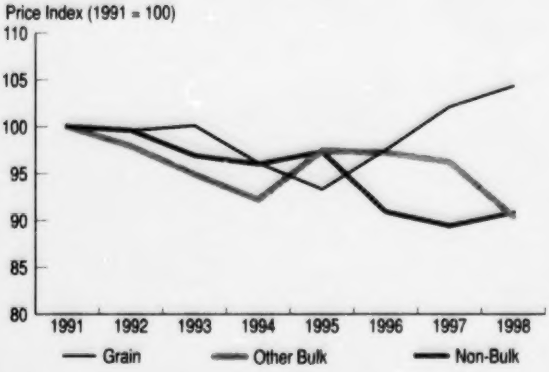
OUTPUT AND PRICE CHANGES

In the first three quarters of 1999, CN and CPR's rail freight output increased by 3.6 per cent over the same period in 1998. This was due to the recovery of grain traffic and growth in intermodal, automotive and forest products. Between 1991 and 1998, the average annual growth rate of railway output was about two per cent.

Rail service prices stayed at their 1997 level in 1998, but declined by four per cent in the first nine months of 1999. In 1998, the average rail price was seven per cent lower than in 1991, an indication that shippers received some of the benefits in productivity gain that the railways had achieved. Since 1991, the price performance of the two mainline railways has allowed rail freight costs of shippers to be reduced by an estimated $1.1 billion. This is equivalent to a 17 per cent reduction in their rail freight bills between 1991 and 1998.

By commodity groups, however, freight prices have fluctuated, reflecting commodity-specific market factors. Figure 14-1 compares changes in rail freight prices for selected commodity groups from 1991 to 1998: grain, bulk (primary commodities, except grain) and non-bulk (including semi-fabricated products, finished goods and intermodal). It shows that the average rail freight rate of grains has increased by ten per cent since 1995. Because of significant declines in 1994 and 1995, however, the average grain freight rate in 1998 was only two per cent higher than in 1991. Freight rates of other bulk and non-bulk commodities are lower than 1991 levels.

FIGURE 14-1: RAIL FREIGHT PRICE INDICES BY COMMODITY GROUP, 1991 - 1998



Sources: Transport Canada and Statistics Canada, "Rail in Canada"

COST STRUCTURE

The total cost of Canadian rail freight operations can be broken down into variable costs and capital or fixed costs. In 1998, variable costs, such as labour, fuel, and other materials and services accounted for 73 per cent of total costs; capital or fixed costs, including depreciation and leasing expenses, debt costs and return to equity, accounted for the remaining 27 per cent.

Railway labour costs, as a percentage of total costs, declined from 40 per cent to 36 per cent between 1991 and 1998. Increases in costs of other materials and purchased services exceeded the drop in the labour cost share. The share of fuel cost remained stable at around eight per cent of total costs. The capital cost share was lower in 1998 than in 1991 because of lower interest rates.

COST AND PRODUCTIVITY INDICATORS

Following strong productivity growth in 1996 and 1997, CN and CPR continued to show significant productivity gains in 1998. The upward trend was primarily due to more efficient use of variable inputs. The variable factor productivity, which compares output growth with the growth of aggregate non-capital inputs such as labour, fuel and materials, increased by 6.6 per cent in 1998. Labour was the main contributor to total productivity growth of the Class I freight railways in 1997, but was surpassed by greater efficiency in fuel use and material inputs in 1998.

Over the past decade, labour productivity improvements in the rail industry have been achieved mostly through workforce reductions.[2] The two mainline freight railways have, in recent years, pursued further workforce restructuring plans. For instance, in 1998–1999, CN reduced its workforce by 3,000 and CPR announced a job reduction plan in the second quarter that affected 1,900 employees.

The partial productivity of capital inputs declined by 3.8 per cent in 1998 from 1997. This was partly attributable to a large amount of railway investment in new locomotives and rolling stock, but was somewhat moderated by productivity gains in variable inputs.

Total factor productivity of Class I railways increased by 3.5 per cent in 1998. Since 1991, it has improved by 27 per cent.

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[2] In this report, an adjustment was made to historical labour input quantities in order to be in accord with the railways' amortisation schedules of special charges related to workforce reduction. The adjustment has an impact on the annual labour and total factor productivity estimations from 1992 to 1997, but it does not change the overall conclusion that Canadian railways have had significant labour productivity and total productivity gains over this period.

The unit cost curve of railways has shown a downward trend since 1991, with an average annual rate of reduction of 2.7 per cent. Lower unit costs have allowed both CN and CPR to offer competitive prices and improve their financial performance at the same time. With 1991 as the base year, productivity performance has allowed the rail industry to achieve total costs in 1998 that are $2.1 billion lower than they would have been without the productivity improvement. These savings are significant, as they represent 32 per cent of the industry cost base.

FINANCIAL PERFORMANCE

In recent years, long-term benefits from productivity gains have allowed the rail industry to substantially improve their profitability. The Canadian operations of CN and CPR continued to show improved financial performance in 1999, based on results from the first nine months. Excluding special charges, their average operating ratio was at 79 per cent, a three per cent improvement over the same period in 1998. Both CN and CPR reported record fourth quarter financial results on a system consolidated basis.

Table 14-2 shows the financial results of the rail freight industry's Class I and regional/shortline railways.

TABLE 14-2: THE RAIL FREIGHT INDUSTRY'S FINANCIAL RESULTS

	1991	*1996*	*1997*	*1998*
Class I Railways – Canadian Operations				
Revenue ($ millions)	6,019	6,150	6,778	6,436
Expenses ($ millions)[1]	5,559	5,215	5,664	5,289
Operating Income ($ millions)	460	934	1,114	1,147
Operating Ratio (per cent)	92.4	84.8	83.6	82.2
Regional/Shortline railways				
Revenue ($ millions)	628	680	727	744
Expenses ($ millions)[1]	477	643	647	644
Operating Ratio (per cent)	76.1	94.5	89.0	86.6

1 excludes special charges

Sources: Transport Canada and Statistics Canada, "Rail In Canada"

Total freight revenues declined by five per cent in 1998. Despite this, however, the 1998 average operating ratio of CN and CPR in Canadian operations was reduced to 82 per cent, from 84 per cent in 1997, reflecting major cost reduction efforts.

Total combined operating income of CN and CPR rose to $1.1 billion (excluding special charges) in 1998, up by three per cent from 1997.

To facilitate yearly comparisons, extraordinary items are excluded, but they are noted for their significant amounts. CN took a special charge of $590 million in 1998, while CPR incurred special charges of $501 million in the second quarter of 1999, both related to workforce reductions. While these reductions are system-wide, most have been carried out in Canadian operations.

With the purchase of Illinois Central Railways in the US, the Canadian operation of CN now represents about 68 per cent of total CN North America in percentage of total system revenues. CPR revenues from Canadian operations represent 73 per cent of its total system revenues.

Regional railways also benefited from a strong Canadian economy in 1998. That same year, Class II railways' total revenues and expenses were $744 million and $644 million, respectively. Compared with 1997, revenues increased by 2.3 per cent and expenses remained at close to the same level. Operating ratios improved from 89 per cent in 1997 to 87 per cent in 1998. The revenue growth in 1998 was partly attributable to new shortline railways, which started up in late 1997 and in 1998. These railways primarily serve local rail freight markets.

VIA RAIL

VIA Rail generated operating revenues of $217 million in 1999, an increase of ten per cent from the same period in 1998, with strong growth in the Quebec–Ontario corridor and the west.

OUTPUT AND PRICE CHANGES

Since 1991, VIA Rail has achieved notable growth in operating revenues mainly through price increases. This trend continued in 1998 as VIA Rail's aggregate prices climbed by 7.2 per cent while output declined by 2.4 per cent.

From 1991 to 1998, the price of rail passenger services increased on average by 4.8 per cent a year, a rate that exceeded the overall inflation trend. These price increases have meant that VIA Rail's passengers contributed $37 million to the reduction of its operating deficits. Rail passenger service demand was up in the mid-1990s, especially for long haul services, but the different rail passenger markets either became stagnant or declined in the last two years. As a result, VIA Rail's output in 1998 was about 0.2 per cent lower than in 1991.

By market, the long haul services recorded the strongest price increases, with an average of seven per cent a year from 1991 to 1998. Over the same period, prices within the corridor services showed an average increase of four per cent a year, whereas remote regional services faced more modest price increases of 2.9 per cent a year.

COST STRUCTURE

VIA Rail's total costs are made up of variable costs (79 per cent) and capital costs (21 per cent). Total variable costs can be broken down into labour, fuel, marketing, payments to carriers, and other materials and services. There have been no significant changes in VIA Rail's cost structure from 1991 to 1998.

In 1998, labour remained VIA Rail's largest cost component, representing 39 per cent of its total costs. In dollar terms, total labour costs are about equivalent to VIA Rail's total passenger revenues. Fuel costs declined during 1998 to 3.6 per cent of total costs as a result of lower fuel prices.

Marketing costs (promotion and commissions to ticket agents) accounted for six per cent of total costs and correspond to 14 per cent of VIA Rail's passenger revenues. Payments to carriers represented 12 per cent of VIA Rail's costs. The remaining variable costs consist of non-income taxes (three per cent) and a residual category accounting for 17 per cent of VIA Rail's costs.

VIA Rail's capital cost share, including the estimated opportunity cost of its capital, is the third highest in the transport sector, after that of CN and CPR and transit systems.

COST AND PRODUCTIVITY INDICATORS

VIA Rail's total factor productivity increased by 32 per cent between 1991 and 1998, with most productivity gains achieved in 1994 and 1995. This robust productivity performance has allowed it to reduce its costs in nominal terms by $117 million since 1991, which was equivalent to 73 per cent of the subsidy reduction. In real terms, the cost reduction is $172 million, or 36 per cent of VIA Rail's cost base.

Labour, fuel, services supplied by CN and CPR, and other materials and services are combined as one "variable" factor of production of rail passenger services. This eliminates substitution effects between these factors. During the 1991 – 1998 period, the productivity of this variable factor increased on average by 3.5 per cent a year.

Labour productivity at VIA Rail grew on average by an impressive four per cent a year, despite a decline in 1998. The productivity levels of VIA Rail can be compared with those of other transport sectors in more than one way. As Table 14-3 shows, when revenues per employee, in constant dollars, are used as the basis of comparison, the employees of regional airlines affiliated with Air Canada and Canadian Airlines International produced 3.7 times more revenues than VIA Rail employees in 1997. Intercity bus employees generated 53 per cent more revenues. These comparisons suggest that the strong growth of VIA Rail's labour productivity may have resulted from untapped productivity slack.

TABLE 14-3: REVENUES PER EMPLOYEE FOR VIA RAIL, REGIONAL AIRLINES AND THE BUS INDUSTRY

(Constant 1991 dollars)

	1991	*1997*
VIA Rail	30.4	42.8
Regional Airlines	115.1	156.7
Intercity Bus Industry	57.7	65.3

Sources: Transport Canada based on VIA Rail and Canadian Transportation Agency files

FINANCIAL PERFORMANCE

VIA Rail received $167 million in operating subsidies in 1998, only about half of the amount it received in 1991. Its cost recovery ratio, with the cost of capital accounted for, rose from 24 per cent to 41 per cent in the same period, as shown in Table 14-4.

TABLE 14-4: VIA RAIL'S FINANCIAL PERFORMANCE RESULTS

	1991	*1996*	*1997*	*1998*
Operating Revenues ($ millions)	145	175	188	197
Operating Expenses ($ millions)[1]	506	433	429	438
Total Cost ($ millions)	596	488	487	479
Cost Recovery Ratio (per cent)[2]	24.3	35.9	38.6	41.1
Operating Subsidies ($ millions)	328	205	196	167

Notes:

1 Includes depreciation, but excludes extraordinary charges.

2 Operating Revenues divided by Total Cost.

Source: Transport Canada, based on Statistics Canada files

From 1991 to 1997 inclusively, VIA Rail was able to maintain a positive cash flow position. This was not the case, however, in 1998. With the reduction in government funding in 1998, the carrier has had to draw about $15 million from its Asset Renewal Fund to cover its cash shortage for its operating expenses.

TRUCKING INDUSTRY

The focus for the trucking industry is on the performance of for-hire trucking firms with annual sales equal to or greater than $1 million. The following analysis excludes individual carriers whose main activity is the movement of household goods (four per cent of larger carrier revenues).

PRICE AND OUTPUT INDICATORS

From 1991 to 1998, trucking industry revenues increased by 8.8 per cent a year. This growth came from an increased level of activity and not an increase in prices, which were declining marginally at 0.5 per cent a year. In real terms, the price decline was actually 2.1 per cent a year. Since 1991, price increases for trucking services were observed in only two years. The price reductions observed in the for-hire trucking activity since 1991 allowed a reduction in shippers' trucking costs by $1.8 billion (12 per cent) by 1998.

Preliminary results for the first half of 1999 show that revenue growth continued to be strong with trucking prices firming up.

There has been little significant difference in the price changes of domestic intraprovincial versus interprovincial trucking services over the 199 –1998 period. The prices for transborder trucking services, however, have shown a nominal increase of 0.7 per cent a year since 1991.

The growth of transborder trucking activities by Canadian-based carriers has been remarkable, with output growth averaging 15 per cent a year. This is the result of three factors: the growth of transborder trade, which reached eight per cent a year; the deeper penetration of the US market (measured by the longer distance travelled by goods transported by road between Canada and the US), which rose by two per cent a year; and market share gains by Canadian-based carriers in transborder activities, as indicated by the increased share of Canadian licenced commercial road vehicles crossing the Canada–US border. This third factor would have contributed to about one quarter of the growth of Canadian trucking firms in transborder operations.

Output growth from domestic markets has been about half the growth of transborder output over the 1991 – 1998 period. In 1998 and 1999, however, the domestic activity of the trucking industry surpassed that of transborder markets, reflecting the increasing strength of domestic markets.

COST STRUCTURE

As with VIA Rail, the variable factors of production in the trucking industry (i.e. labour, fuel, purchased transport services and other materials and services) have been grouped to avoid measurement problems arising, for instance, from potential substitution between internal labour versus outsourcing. In 1998, variable costs accounted for 89 per cent of industry costs; capital cost, which is all capital goods used by trucking firms whether owned or leased, made up the remaining 11 per cent. In 1991, capital costs accounted for 14 per cent of total costs.

Among variable factors, labour accounts for 46 per cent of total costs, down from 48 per cent. The fuel cost share increased from 12 to 13 per cent between 1991 and 1998.

PRODUCTIVITY AND UNIT COST INDICATORS

Total factor productivity in the trucking industry increased by 2.1 per cent a year between 1991 and 1998. Trucking unit costs in 1998 were seven per cent lower than in 1991. In more recent years, industry performance in terms of productivity and unit costs has exceeded the longer-term trends. Since 1991, this cost performance allowed the trucking industry to reduce its costs by $2.2 billion in 1998, or 15 per cent of its cost base.

Since the prices attached to the variable factors of production used in trucking operations follow the price trends in the economy, the source of cost reduction in trucking came from productivity improvement in the use of these variable factors of production. This productivity growth of the variable factors of production is not the result of capital substitution, since capital productivity also grew. While this is indicative of a more efficient use of assets, it may also be partly the reflection of the average age of the capital stock used in the industry. The reduction of the cost of capital from lower interest and tax rates is also a contributing factor.

Capital contributed to 27 per cent of the cost reduction of trucking firms, which is more than twice its importance in the total costs of the industry.

FINANCIAL PERFORMANCE

Trucking is an industry whose viability can be achieved with an operating margin equal to about four per cent of its revenues. Other transport industries, such as rail, require higher operating margins, as more assets are needed to generate each dollar of revenue.

Between 1991 and 1996, the financial performance of the trucking industry was relatively stable, with 95 per cent of its cost reduction returned to users as lower prices. Since 1996, the industry has been able to retain more than half of its cost reductions. The improvement of the financial situation in the last two years may appear modest, when measured by the reduction in operating ratios of 2.2 percentage points, as shown in Table 14-5. This contributed to a 57 per cent increase in return on assets.

TABLE 14-5: THE TRUCKING INDUSTRY'S FINANCIAL INDICATORS

	1991	*1996*	*1997*	*1998*
Operating Revenues ($ millions)	8,007	12,602	13,704	14,433
Operating Expenses ($ millions)	7,755	12,193	13,063	13,643
Operating Income ($ millions)	252	410	641	790
Operating Ratio (per cent)	96.9	96.7	95.3	94.5
Return on Assets (per cent)	11.7	12.7	18.7	19.9

Sources: Transport Canada, based on Statistics Canada files

Based on the performance of large trucking carriers in the first three quarters of 1999, profitability should have improved in 1999. The operating ratio of the larger carriers fell by one percentage point, however, from 95.8 to 94.8 per cent.

THE BUS INDUSTRY[3]

The bus transport industry is made up of three segments: intercity bus services, school bus services, and urban transit services. The activities of school bus operators are not covered in this chapter.

INTERCITY BUS INDUSTRY

The distinction in the analysis between scheduled and charter intercity bus service operators has been dropped. It was becoming increasingly blurred as more and more carriers offered both types of services and/or data reported under scheduled or charter operations included more and more significant portions of revenues emanating from a mix of the two types of services.

PRICE AND OUTPUT INDICATORS

Intercity bus industry revenues, after several years of relative stability, jumped by 12 per cent in 1998, due to a 13 per cent increase in outputs. Industry revenues were generated by passenger services (84 per cent), parcel services (12 per cent) and various other activities (four per cent).

Scheduled bus services had a 40 per cent share of passenger service revenues in 1998. In 1991, their revenue share was as high as 56 per cent. The revenue share of charter and tour services reached 45 per cent in 1998. The biggest source of growth is the specialized services such as limousine and sightseeing. This market segment had a 15 per cent share of passenger services in 1998, up from only ten per cent in 1991.

Changes in demand level for each type of intercity bus service appear to be related to price changes observed for the services over time. Demand for scheduled intercity bus services has fallen by 23 per cent since 1991 while nominal prices for the same services have gone up by 5.4 per cent. Conversely, over the same period, the prices of other bus services have fallen by 20 per cent, while activity levels have increased by 93 percent.

Over the 1991 – 1998 period, the bus industry's output increased by 2.6 per cent a year, while its prices declined by 0.9 per cent.

COST STRUCTURE

The cost structure of the bus industry has remained stable over time. Labour costs represented about 39 per cent of the industry's total in 1998, compared with 40 per cent in 1991. In 1998, fuel costs represented 8.5 per cent, versus 8 per cent in 1991. Other operating costs, which include marketing, materials other than fuel, insurance and other miscellaneous expenses, amounted to 36 per cent of total costs in 1998, compared with 35 per cent in 1991. The share of capital costs (leasing, depreciation, and financing) has varied within an 18 to 19 per cent range.

PRODUCTIVITY AND UNIT COST INDICATORS

Between 1991 and 1998, both variable and total factor productivity in the bus industry increased by 3.9 per cent a year. The productivity gains, combined with moderate factor price increases, led to unit cost declines of two per cent a year. Each factor of production contributed to the reduction of total costs, as a proportion close to their share of total costs.

Since 1991, bus industry costs have been reduced by $168 million from the level that they would have reached in 1998, if the industry had not achieved productivity gains. This cost reduction is equivalent of 24 per cent of industry costs in 1998.

FINANCIAL PERFORMANCE

Table 14-6 shows that in the early 1990s, the industry had high operating ratios, in excess of 95 per cent. Its operating margins were then below the long-term viability level. Since 1994, the industry has achieved operating ratios generating viable returns. This turnaround was achieved in an environment of slow growth/declining demand and falling prices. Productivity gains made by the industry were directly responsible for the improvement in industry profitability, even if more than two thirds of the industry productivity gains were returned to users in lower prices.

TABLE 14-6: SUMMARY OF FINANCIAL INDICATORS FOR ALL INTER-CITY BUS INDUSTRIES

	1991	*1996*	*1997*	*1998*[1]
Operating Revenues ($ millions)	593	617	593	664
Operating Expenses ($ millions)	566	566	533	588
Operating Ratio (per cent)	95.4	91.8	89.8	88.5

1 Preliminary estimate.

Sources: Transport Canada, based on Statistics Canada files

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[3] The 1995 – 1997 data have been revised to reflect the new North American Industry Classification System.

Urban Transit Systems

Urban transit service operators are members of the Canadian Urban Transit Association. Total operating revenues, including operating subsidies, have grown by 1.4 per cent a year between 1991 and 1998.

Price and Output Indicators

Between 1991 and 1996, the output of transit systems, measured by the number of passengers and vehicle-kilometres, declined by a combined[4] 1.5 per cent a year. Since 1997, output has rebounded, advancing annually by 1.9 per cent. There is a similar break in price trends. Between 1991 and 1996, prices increased by 5.1 per cent a year. After 1996, price increases slowed to less than 1.8 per cent a year. Overall, between 1991 and 1998, transit prices increased on average by 4.2 per cent a year, or 3.6 per cent a year in real terms. This real increase represented an additional disbursement of $258 million by 1998 for the riders of transit systems.

Cost Structure

Labour costs, accounting for as much as 54 per cent, represent the largest component of total transit costs in 1998. Transit systems are thus the most labour-intensive industry of the transport sector. All other transport sectors have an average 38 per cent labour cost share. Simulating the average salary of the intercity bus industry on transit systems would reduce labour costs by about $845 billion, or 41 per cent of total costs.

Urban transit is the second most capital intensive industry in the transport sector after rail freight. Capital costs account for more than one quarter of the total costs in 1998.

The larger labour and capital cost shares are offset by the lower share of "other materials and services," an indication that outsourcing is not as important in the management of transit systems as it is in other transport sectors.

Productivity and Unit Cost Indicators

In the early 1990s, up to 1996, the total factor productivity of transit systems declined by 1.1 per cent a year. In recent years, however, overall productivity has risen by 1.8 per cent a year. The performance of the variable factors of production has been even more robust. While overall productivity declined by 1.9 per cent between 1991 and 1998, that of the variable factors rose by 7.4 per cent. The productivity decline of capital, 28 per cent, reflects the increased capitalization of transit systems.

Per unit of output, transit unit costs rose at 3.8 per cent a year until 1996. This increase exceeded the general inflation rate of 1.6 per cent. Compounded over five years, the gap was equivalent to $365 million in 1996. Two years later, this was reduced to about $117 million, as unit costs declined annually by 1.4 per cent. Over the 1991 – 1998 period, urban transit unit costs increased by 2.3 per cent a year. The contributions of labour and capital costs to the total cost increase were 139 per cent and 133 per cent, respectively. Other variable costs had to decline by the equivalent of 172 per cent of the total cost increase.

Financial Performance

The total cost of transit systems was estimated at $3.7 billion in 1998, as shown in Table 14-7. Cash operating costs were $2.8 billion. Users paid 47 per cent of the total cost of the system. Their share of total costs has been rising steadily since 1991, except for a dip in 1993. While operating subsidies have been relatively stable, there has been a strong upward trend in capital costs.

TABLE 14-7: SUMMARY OF FINANCIAL INDICATORS FOR TRANSIT SYSTEMS, 1991 – 1998

(Millions of dollars)

	1991	*1996*	*1997*	*1998*
Operating Revenues	1,416	1,621	1,712	1,744
Cash Operating Expenses	2,748	2,790	2,788	2,789
Capital Cost	691	837	876	918
Total Cost	3,440	3,627	3,665	3,707
Operating Subsidies	1,557	1,561	1,495	1,523
Capital Subsidies	486	494	641	858
Cost Recovery Ratio (per cent)	41.2	44.7	46.7	47.0

Source: Transport Canada, based on Statistics Canada files

Performance of Transit Systems in Selected Provinces

Table 14-8 compares key indicators of the performance of transport systems for selected provinces: British Columbia, Alberta, Ontario and Quebec. The transit systems of other provinces are small; together, they account for 5.1 per cent of transit passenger revenues. More importantly, the analyses of individual provinces' systems were restricted by data limitations.

Users of Ontario transit systems pay the highest prices, while those in Alberta pay the lowest. The reverse is true in terms of demand growth, with Ontario showing the strongest growth and Alberta the weakest. Per unit of output, British Columbia has the highest costs, followed by Ontario. In keeping with its lower prices, Alberta has the

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[4] The two indicators of passengers and distance run have been averaged in a combined indicator.

TABLE 14-8: FINANCIAL INDICATORS OF TRANSIT SYSTEMS FOR SELECTED PROVINCES

	Que.	*Ont.*	*Alta.*	*B.C.*	*Total*[2]
1998 Price[1] levels (Canada = 100.0)	84.1	118.7	72.8	94.8	100
1991-98 Output increase[1] (per cent)	27.3	45.4	9.2	12	100
1998 Total factor productivity (Canada = 100.0)	107.7	97.5	88.6	111.8	100
1998 Total unit cost (Canada = 100.0)	96.4	105.8	80.1	113.7	100
1998 Cost recovery (per cent)	41.3	52.2	43.5	39.4	47
1998 Revenue shortfall (millions of dollars)	571	865	151	297	1,963

[1] Based on the average index of passengers and distance run.

[2] Includes the rest of Canada.

Source: Transport Canada, based on Statistics Canada Files

lowest unit costs. Quebec has the second lowest unit costs, but the strongest productivity.

In 1998, the revenue shortfall of all systems was close to $2 billion. Ontario transit systems had the highest cost recovery of all systems, at more than 50 per cent of their total costs, and Ontario's users paid the highest transit prices. British Columbia and Quebec had the lowest cost recovery, the former because of its higher unit costs, the latter because of lower prices.

AIR TRANSPORT INDUSTRY

Over the past two years, the Canadian air industry has undergone a series of mergers and acquisitions aimed at improving productivity and financial viability through restructuring.

In 1998 and early 1999, both Air Canada and Canadian Airlines International restructured their regional affiliates. Air Canada merged its two eastern regional carriers, Air Nova and Air Alliance, while Canadian Airlines sold one of its regional affiliates, Inter-Canadien, and legally amalgamated two others, Time Air and Ontario Express,[5] into Canadian Regional.

As the financial viability of Canadian Airlines and its affiliates became precarious in 1999, further restructuring was initiated. On August 13, 1999, the federal government established a special process to facilitate the orderly restructuring of the airline industry. Further details are presented in Chapter 11, *Structure of Transportation Industry.*

This section does not analyze the performance of individual carriers in detail, but instead looks at the industry's overall performance. Because of limited data, the industry is taken to be most of level I and II air carriers[6] for the purpose of this section. This group accounts for 82 per cent of total industry revenues. In 1998, these carriers generated total revenues of $10 billion, an increase of 7.6 per cent from 1997. However, falling productivity and significant increases in factor prices resulted in a sharp decline in industry profitability.

PRICE AND OUTPUT INDICATORS

In the first six months of 1999, output grew by 2.0 per cent whereas prices increased by 4.9 per cent. In 1998, the aggregated airline price and output levels were affected by a labour dispute at Air Canada and by several external factors, including a severe ice storm in eastern Canada, a weaker trans-Pacific market, stiffer price competition in domestic and international markets, and the replacement of the Air Transportation Tax (ATT) by NAV Canada fees. Overall, in 1998, the industry had an average price increase of 3.3 per cent and output increase of 6.1 per cent.

Part of the price increase was due to the implementation of NAV Canada air navigation fees. Prior to the privatization of air navigation services, navigation fees had been added to the price of air tickets paid by consumers in the form of the Air Transportation Tax, the proceeds of which funded those services.[7] Since March 1998, air navigation fees are no longer secluded as a tax but are included in the operating expenses of the carriers, and the carriers in turn recover them through the prices they charge. Previously, the Air Transportation Tax was not taken into account in the analysis of air prices. It is estimated that the new air navigation fees explains most of the price increases of the carriers. But, since these fees replaced the Air Transportation Tax, the net price increase in 1998 was close to zero. Consumers have benefited from the new system. Using 1997 traffic to simulate the differences between the Air Transportation Tax and NAV Canada fees, the air navigation fees, as revised in September 1999, would produce approximately ten per cent less revenues than the Air Transportation Tax.

Table 14-9 shows the effect of navigation fees on air carriers' revenues by sector. On average, the new

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[5] Ontario Express operated under the name "Canadian Partners."

[6] Air Canada, Canadian Airlines, Air Nova, Air Atlantic, Air Alliance, Inter-Canadien, Air Ontario, Ontario Express, Time Air, Air BC, Air Transat, Canada 3000, Royal Air and WestJet. The last four carriers are not included in the productivity and cost analyses.

[7] The Air Transportation Tax was reduced by approximately one half in March 1998, and subsequently eliminated in November 1998. Correspondingly, the new fees introduced by NAV Canada were set at 50 per cent of fees required to achieve the recovery of the services.

NAV Canada fees are estimated to have increased carriers' prices by 2.6 per cent. The largest impact was on domestic services, the prices of which rose by as much as 3.6 per cent. The impact is larger on domestic services, since distance on the Canadian territory, a key parameter of the navigation fees, is shorter on international flights.

TABLE 14-9: IMPACT OF NAVAID FEES ON CANADIAN CARRIERS[1]

	Per cent of revenues	*Millions of dollars*
Domestic	3.6	150.0
Transborder	1.7	33.2
Other International	1.7	48.0
Total	**2.6**	**231.2**

[1] NAV Canada began to charge the fees in March 1998.

Source: Transport Canada

From 1991 to 1998, output of the airline industry increased by 51 per cent, while average prices increased by only 2.5 per cent. The prices of domestic passenger services rose by 3.4 per cent; once the effect of the NAV Canada fees is accounted for, domestic passenger prices in 1998 were at about the same nominal level as in 1991. This corresponds to an 11.5 per cent decline in real terms and has stimulated domestic demand, which increased by 28 per cent. Transborder is the only market segment that experienced growth in both price and output over this period, by 35 per cent and 98 per cent, respectively. Since 1991, discount fares have largely contributed to the 12 per cent decline of the price of international services outside the US, and to significant demand increases.

Total airline revenues from freight activity have increased between 1991 and 1998 by 14 per cent, while air cargo rates declined by 5.6 per cent. The volume of air freight grew by 21 per cent over the same period. Overall, if air transport prices had grown at the rate of inflation during this period, airline users would have spent $625 million more to travel than they did in 1998, a net saving of seven per cent. However, the inability of some air carriers to align price changes to the evolution of their cost structure was one of the major factors that rendered them unprofitable.

COST STRUCTURE

The cost structure of the industry, in terms of the split between variable and capital cost, is relatively stable, at 82 per cent for variable and 18 per cent for capital. There were, however, some major shifts within the variable cost group during the eight-year period.

Labour costs represented about 24 per cent of total variable cost in 1998, close to that of 1997, but was 3.4 percentage points lower than in 1991. Fuel cost share was around 14 per cent of total in the aviation sector from 1991 to 1997, but dropped to 12 per cent in 1998. Other variable costs as a group (airport and navigation fees, marketing, materials and other expenses) represented a cost share of 46 per cent in 1998, significantly higher than 40 per cent in 1991.

Capital costs as a share of total cost have not changed in 1998. There has been a shift from owned to leased assets. The leasing component within capital costs went from one third in 1991 to more than one half in 1998.

PRODUCTIVITY AND UNIT COST INDICATORS

Between 1991 and 1998, total factor productivity of the airline industry as a whole increased by 27 per cent, with most of the gains achieved in 1996 and 1997. Since 1991, the unit cost of the air industry has declined by nine per cent, half the cost decline observed in the railway industry over the same period. This cost performance was one of the factors that has, since 1991, allowed the major air carriers to keep factor cost increases below inflation and achieve cumulative annual cost savings. By 1998, these savings had reached $1.3 billion, or 14 per cent of the cost base of the airline industry.

In 1998, the productivity of the airline industry dropped by 6.5 per cent, while unit cost increased by 5.1 per cent. This performance explains the decline in profitability of the industry during the year. For instance, after inflation, industry costs increased by $348 million whereas revenues grew by $55 million. The performance of individual carriers, however, varied significantly. Air Canada's productivity was adversely affected by its pilots' strike, while Canadian Airlines was subject to market competition preventing it from passing its cost increases on to users.

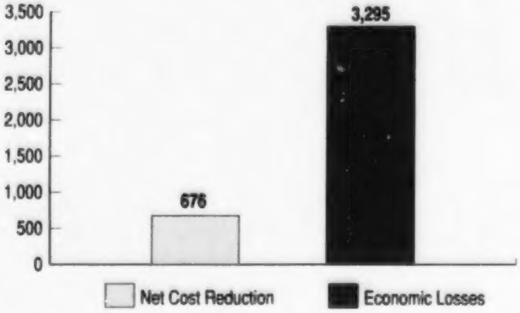
With the exception of fuel, all major cost groups (including labour, airport and navigation fees, aircraft rents and marketing expenses) contributed to a 13 per cent increase in total cost in 1998. The productivity decline meant higher unit costs, but industry costs also rose because of exchange rate variations. The devaluation of the Canadian dollar against the US dollar had a significant impact on some large Canadian carriers, as part of their expenses (such as aircraft rents, commissions and other purchased services) were incurred in US dollars. It is estimated that exchange rates had the effect of raising input prices by about two per cent.

FINANCIAL PERFORMANCE

The net cost reduction, after price reductions, between 1991 and 1998 reached $676 million. They were not, however, sufficient to offset the cumulative economic losses[8] of close to $3.3 billion accumulated by the industry over the same period. Such losses, sustained over several years, resulted in the structural changes experienced by the industry in 1999. Figure 14-2 shows cumulative financial losses and cost reductions in the airline industry from 1992 to 1998.

FIGURE 14-2: CUMULATIVE ECONOMIC LOSSES AND NET COST REDUCTION, AIRLINE INDUSTRY, 1992 – 1998

(Millions of dollars)



Source: Statistics Canada

Canadian Airlines accumulated financial losses in 1998 and 1999 of $360 million. These consecutive losses have compromised the viability of the carrier. In December 1999, the majority of the shareholders of Canadian Airlines accepted Air Canada's purchase offer. The performance of Canadian Airlines' regional airlines, for the most part, was also not robust.

Air Canada's profitability was adversely affected in 1997 and 1998 by a labour dispute and several external factors. There was significant improvement in 1999. However, its operating income rose to $503 million, from $144 million in 1998, and its net income reached $213 million, compared with a $16 million loss in the previous year.

In 1998, the total combined revenues of Air Canada and Canadian Airlines, including their affiliates, amounted to just over $9 billion, an increase of six per cent from 1997. Total cost, however, increased by nine per cent. As a result, their average operating ratio deteriorated to 98.7 per cent from 94.6 per cent. Table 14-10 summarizes the financial results for the airline industry.

TABLE 14-10: SUMMARY OF FINANCIAL RESULTS FOR THE AIRLINE INDUSTRY

	1991	*1996*	*1997*	*1998*	*1999*
Air Canada and Canadian Airlines[A]					
Revenue ($ million)	6,690	7,976	8,648	9,103	9,772
Expenses ($ million)	6,678	7,856	8,182	8,981	9,411
Operating Income ($ million)	11	121	465	122	361
Operating Ratio (per cent)	99.8	98.5	94.6	98.7	96.3
Larger Independent Carriers[B]					
Operating Ratio (per cent)	98.8	97.1	94.0	97.6	N/A

Sources: A Consolidated results from Air Canada's and Canadian Airlines' annual reports
B Transport Canada, based on Statistic Canada's files

Lower productivity performance and rising costs were major factors in the sharp decline of the air industry's profitability as a whole in 1998. Furthermore, relatively high debt costs added to net losses for some carriers.

In 1999, total combined operating revenues of Air Canada and Canadian Airlines climbed to $9.8 billion, an increase of seven per cent from 1997. Total cost, however, increased by five per cent. As a result, their average operating ratio improved to 95.3 per cent. Fourth quarter results of Canadian Airlines are estimated.

In 1998, the independent carriers[9] as a group also showed a deterioration, with their average operating ratio climbing 3.6 percentage points to 97.6 per cent.

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[8] The economic loss is the difference between the operating margin of the firms and the capital cost that ensures their financial viability.

[9] Air Transat, Canada 3000, Royal Air and WestJet.

TABLE 14-11: PRICE AND OUTPUT INDICATORS FOR TRANSPORT INDUSTRIES, 1991 – 1998

	Price changes (Annual per cent increase)				*Output changes (Annual per cent increase)*			
	1995/96	*1996/97*	*1997/98*	*1991–1998*	*1995/96*	*1996/97*	*1997/98*	*1991–1998*
CN and CP	(2.6)	(0.2)	(0.3)	(0.9)	3.0	10.4	(4.7)	1.9
VIA Rail								
Corridor	5.3	6.1	6.7	4.1	(4.7)	2.0	(4.6)	(0.9)
Long haul	11.3	7.3	8.6	6.9	(3.6)	(5.5)	(1.6)	0.7
Remote-regional	3.0	0.6	14.2	2.9	(2.4)	10.1	(5.9)	0.6
Total	6.9	6.1	7.2	4.8	(3.6)	1.2	(2.4)	(0.2)
Trucking								
Intraprovincial	(0.3)	1.1	(3.0)	(0.9)	10.7	1.4	8.8	7.3
Interprovincial	(5.5)	4.5	(1.3)	(0.2)	9.5	2.5	4.7	6.2
Transborder	(3.4)	3.3	0.2	0.7	11.4	16.3	6.9	14.1
Total trucking	(2.1)	2.3	(1.5)	(0.5)	10.4	6.7	6.6	9.3
Intercity Bus Industry								
Regular bus services	3.6	(0.3)	7.6	0.9	(4.7)	2.7	(6.7)	(3.8)
Charter bus services	0.8	(5.3)	(4.3)	(3.9)	2.1	(7.1)	29.5	10.3
Total bus	1.4	(0.1)	(5.1)	(0.9)	(0.9)	(2.9)	17.9	2.6
Transit								
Passengers	5.9	3.6	3.6	(0.6)	2.2	2.2	(0.4)	(0.8)
Vehicle-km	9.1	1.1	1.1	(3.5)	4.7	4.7	0.1	(0.6)
Airline Industry								
Domestic passenger	(6.7)	0.4	3.8	0.5	11.4	6.3	5.8	3.6
International passenger	(2.1)	6.2	1.9	0.3	14.1	10.4	5.3	8.5
Air freight	(6.8)	3.2	4.9	(0.8)	5.6	7.8	(3.5)	2.8
Total Air Industry	(4.3)	3.3	3.3	0.4	12.2	8.6	4.1	5.7
Larger Transport Industries[1]								
Freight	(2.4)	1.5	(1.5)	(0.8)	7.7	8.0	3.7	6.6
Passenger	(4.4)	3.5	3.3	0.4	12.8	8.4	4.7	5.9
Total	(2.9)	2.0	0.1	(0.4)	9.2	8.1	3.6	6.3
Total Transport[2]								
Commercial carriers	(3.0)	1.6	(0.0)	(0.4)	9.2	8.3	3.7	6.2
Public carriers	7.4	3.1	0.3	4.3	(2.5)	2.6	1.8	(1.1)
Total	(2.4)	1.7	(0.0)	(0.1)	8.4	7.9	3.6	5.7

[1] CN and CP Rail, and the trucking and airline Industries.

[2] Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and Carriers' files

TABLE 14-12: PRICE REDUCTION AND COST SAVINGS IN TRANSPORT INDUSTRIES BETWEEN 1991 AND 1998

	CN and CP	*VIA Rail*	*Trucking*	*Intercity bus*	*Transit*	*Airlines*	*Larger industries*[1]	*Total*[2]
Price Reduction ($ Million)	1,091	(37)	1,799	113	(258)	625	3,514	3,332
Price Reduction (%)	16.9	(18.9)	12.5	17.0	(14.8)	7.1	11.8	10.3
Cost Saving ($ Million)	2,118	172	2,201	168	(117)	1,502	5,822	6,045
Cost Saving (%)	32.7	35.8	15.6	26.4	(3.1)	16.8	19.7	17.6

[1] CN and CP Rail, and the trucking and airline industries.

[2] Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and Carriers' files

TABLE 14-13: EFFICIENCY INDICATORS, TRANSPORT INDUSTRIES, 1991 TO 1998

		Productivity (Annual percentage increase)				*Unit Costs (Annual percentage increase)*			
		1995/96	*1996/97*	*1997/98*	*1991–1998*	*1995/96*	*1996/97*	*1997/98*	*1991–1998*
CN and CP Rail	Variable	7.4	8.0	6.6	4.7	(6.5)	(5.7)	(5.8)	(2.9)
	Capital	3.1	4.6	(3.8)	1.3	(10.6)	4.0	9.0	(2.4)
	Total	6.3	7.1	3.5	3.8	(7.6)	(3.2)	(1.8)	(2.7)
VIA Rail	Variable	2.8	2.2	(0.9)	3.5	1.8	(1.9)	1.7	(2.3)
	Capital	7.2	9.5	2.9	6.3	(6.8)	0.8	(2.5)	(4.7)
	Total	3.7	3.7	(0.2)	4.1	(0.1)	(1.4)	0.9	(2.8)
Trucking Industry	Variable	4.3	1.5	5.0	2.3	(1.6)	0.9	(2.3)	(0.6)
	Capital	0.1	0.9	(0.7)	1.0	4.2	(1.7)	(5.6)	(4.0)
	Total	3.8	1.4	4.3	2.1	(1.0)	0.6	(2.7)	(1.0)
Intercity Bus Industry	Variable	(0.9)	6.6	4.6	3.9	3.5	(0.6)	(6.8)	(1.9)
	Capital	(1.1)	(5.2)	(0.4)	3.9	(0.7)	(2.3)	(2.6)	(2.8)
	Total	(1.0)	4.4	3.7	3.9	2.7	(0.9)	(6.0)	(2.1)
Transit	Variable	(3.1)	3.6	(1.1)	0.4	3.9	(2.5)	(2.5)	1.4
	Capital	(9.4)	(2.1)	(46.6)	(12.3)	7.8	2.8	0.8	5.4
	Total	(4.6)	2.2	(15.1)	(2.8)	4.8	(1.3)	(1.7)	2.3
Airline Industry	Variable	6.4	2.5	(0.7)	3.1	(3.3)	(2.3)	4.9	(1.3)
	Capital	18.6	3.1	(6.8)	4.7	(15.0)	(3.7)	10.0	(1.8)
	Total	8.6	2.6	(1.8)	3.5	(5.6)	(2.6)	5.8	(1.4)
Larger Transport Industries[1]	Variable	5.6	3.1	3.6	3.1	(3.2)	(1.5)	(1.2)	(1.4)
	Capital	6.7	2.9	(3.7)	2.3	(7.7)	(0.2)	4.5	(2.7)
	Total	5.8	3.1	2.3	3.0	(4.0)	(1.3)	(0.2)	(1.6)
Total Transport[2]	Commercial Carriers	5.6	3.1	2.3	3.0	(3.9)	(1.3)	(0.4)	(1.6)
	Public Carriers	(3.6)	2.4	(13.5)	(2.0)	4.2	(1.3)	(1.4)	1.6
	Total	4.4	3.0	0.2	2.3	(2.8)	(1.3)	(0.5)	(1.2)

1 CN and CP Rail, and the trucking and airline Industries.
2 Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and Carriers' files

TABLE 14-14: COST STRUCTURE OF TRANSPORT INDUSTRIES, 1991 AND 1996 – 1998

(Per cent of total costs)

		CN and CP	*VIA Rail*	*Trucking*	*Intercity Bus*	*Transit*	*Airlines*	*Larger Industries*[1]	*Total*[2]
1991	Variable	70.4	77.2	86.2	81.3	78.8	81.6	79.8	79.6
	Labour	40.1	38.5	48.1	39.8	51.6	27.5	40.7	40.7
	Fuel	8.4	3.2	11.7	8.0	4.0	13.6	10.1	10.1
	Other	22.0	35.5	26.4	33.5	23.2	40.4	29.0	28.9
	Capital	29.6	22.8	13.8	18.7	21.2	18.4	20.2	20.4
1996	Variable	73.8	78.4	88.8	81.7	76.2	80.7	82.5	81.7
	Labour	38.4	37.1	44.2	40.0	55.0	24.7	39.0	39.0
	Fuel	8.2	3.9	13.3	8.5	5.4	14.6	11.6	11.6
	Other	27.1	37.5	31.3	33.1	15.8	41.4	31.9	18.3
	Capital	26.2	21.6	11.2	18.3	23.8	19.3	17.5	18.3
1997	Variable	74.6	79.9	88.2	82.2	75.5	82.6	83.3	82.4
	Labour	34.7	36.7	44.9	39.5	54.3	24.1	38.5	38.5
	Fuel	9.2	4.1	13.1	9.4	5.4	14.4	11.6	11.6
	Other	30.8	39.1	30.2	33.3	15.9	44.1	33.2	17.6
	Capital	25.4	20.1	11.8	17.8	24.5	17.4	16.7	17.6
1998	Variable	72.7	79.4	88.5	82.0	74.5	82.8	83.1	82.0
	Labour	36.0	38.6	45.6	38.7	54.0	24.1	38.8	38.8
	Fuel	7.9	3.6	13.0	8.5	5.2	12.3	10.8	10.8
	Other	28.9	37.2	29.9	34.8	15.3	46.4	33.4	18.0
	Capital	27.3	20.6	11.5	18.0	25.5	17.2	16.9	18.0

1 CN and CP Rail, and the trucking and airline Industries.
2 Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and Carriers' files